LAKEVIEW GEOTHERMAL PROSPECT

Lake County, Oregon

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DISCLAIMER

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF PLATES

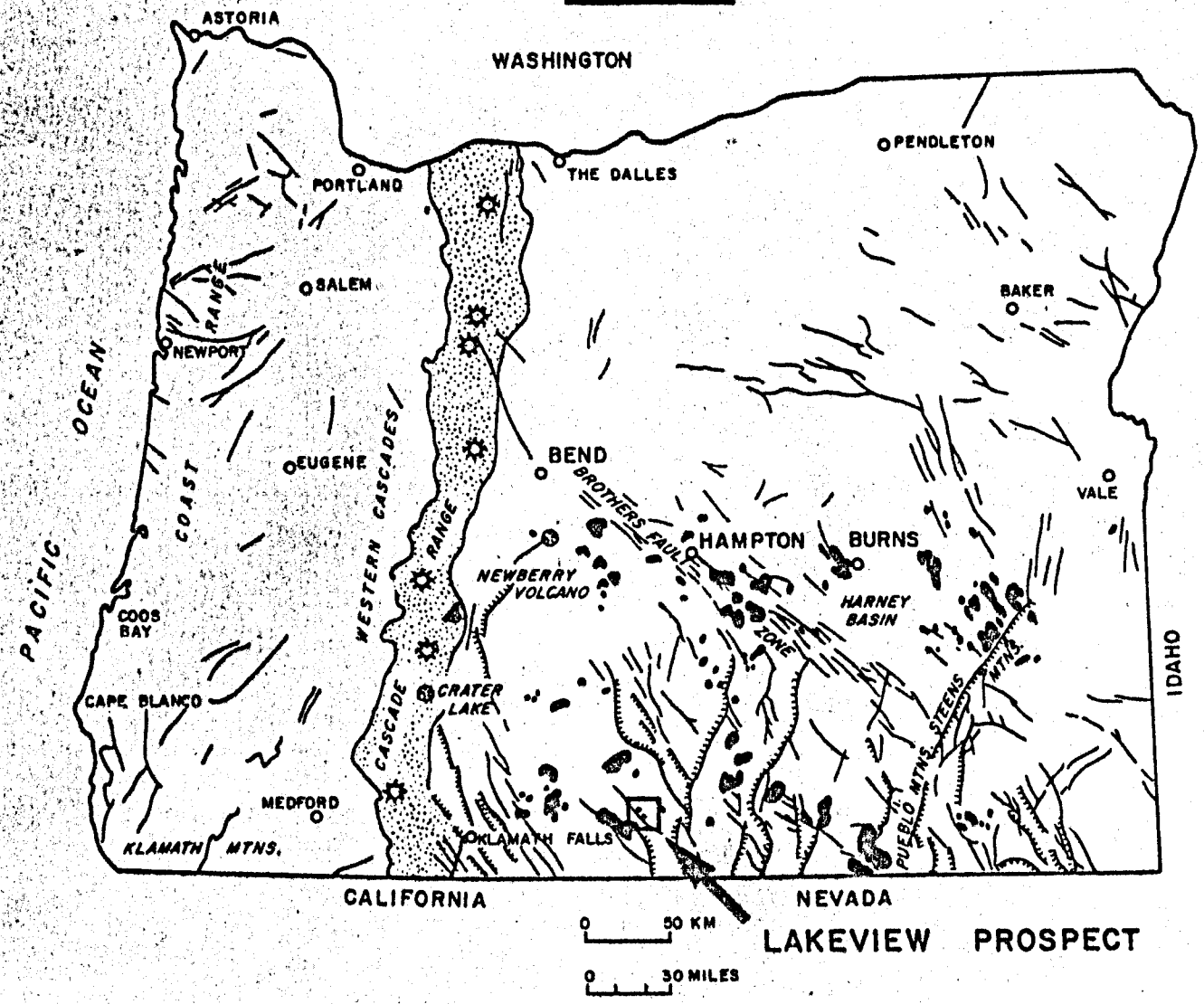
INTRODUCTION

The Lakeview geothermal prospect is located in Lake County, Oregon about 20 miles northwest of Lakeview (Fig. 1). This prospect is poorly named and should not be confused with the hot spring system located within the town of Lakeview where direct use projects involving moderate temperature thermal water are underway.

The prospect is located primarily on the Fremont National Forest with lesser scattered parcels of private land. The topography varies from wide flat valley bottoms to steep hillsides, however, most of the area has gentle slopes accessible to a drill rig. Access is excellent via numerous Forest Service logging roads. Vegetation varies from grass and sagebrush to aspen, pine, or fir forest. Summers are warm and generally dry while winters are cold and snowy. Without plowing, snow closes much of the area from December until May or early June. In the vicinity of the prospect the forest has been heavily logged so no wilderness studies hinder exploration.

This report contains the results of three seasons of work in the Lakeview prospect and is expected to be the final formal report written on the Lakeview prospect.

FIGURE 1



MAP OF OREGON SHOWING THE LOCATION OF THE AREA OF INTEREST.

ALSO INCLUDED ARE MAJOR STRUCTURAL FEATURES AND RHYOLITIC DOMES IN THE SOUTHEASTERN PART OF THE STATE (BLACK AREAS). HACHURES ARE SHOWN ON THE DOWNTHROWN SIDE OF THE LARGER FAULTS OF THE BASIN AND RANGE PROVINCE.

(FROM MACLEOD ET. AL. 1975)

PREVIOUS WORK

The only previous geothermal work published in the area are a few temperature gradients (Hull and others, 1978). The geology of the region has been mapped repeatedly on a reconnaissance basis. The more recent maps are by Walker (1963), Peterson and McIntyre (1970), and Walker (1980). A complete bibliography of published geological work is available in Walker's 1980 open-file report.

GEOTHERMAL HISTORY

The area first came to the attention of Phillips personnel during the summer of 1978 when the Oregon Department of Geology and Mineral Industries published open-file report O-78-4. In this report three anomalously warm mineral exploration holes were measured near the White King uranium mine. At this time Phillips Uranium Corporation was in the process of planning a drilling program for the area during the fall of 1978. During this drilling program the uranium exploration holes were converted to temperature-gradient holes by inserting 1" PVC pipe. Also during the fall of 1978 three previously drilled uranium exploratation holes were located and probed. By late fall 1978 temperature data were available from 12 mineral exploration holes. This data, when contoured, suggested a very large thermal anomaly of moderate intensity was present. During the uranium drilling program a reconnaissance stream and cold spring geochemical survey was undertaken.

In the summer of 1979, 24 shallow temperature-gradient holes were drilled. These holes outlined the thermal anomaly and confirmed that it was smaller than the original data suggested. Even after this drilling, the thermal

anomaly covered about half a township.

During the summer and fall of 1980, four additional shallow temperature-gradient holes were drilled. Attempts were made to drill three strat. tests to depths of 2000 feet. Drilling problems caused one hole to be plugged and the other two to be completed at depths of 1530 feet and 1090 feet. In 1981 a fourth strat. test was attempted but was completed to a depth of 840 feet. Also, a 1000-foot deep uranium exploration hole drilled by Western Nuclear in 1981 was converted to a temperature-gradient hole.

GEOLOGY

The Lakeview prospect is located within the Basin and Range Province in the Fremont Mountains. The Fremont Mountains consist entirely of volcanic rocks and associated sediments of Eocene or younger age. The following geology is primarily distilled from Walker (1980) and the reader is referred to his map as no geologic map has been prepared for this report.

The oldest rocks in the area are andesites and basalts of late Eocene or early Oligocene age. The thickness of this unit is not known, but these rocks probably form most of the sequence penetrated by a 12,093 foot deep oil test drilled by Humble Oil Company a short distance north of the main thermal anomaly. (Plate 1).

Overlying the older andesites and basalts is a thick sequence of ash flow tuffs, tuffs and tuffaceous sedimentary rocks. These probably range in age from late Oligocene to late Miocene. The usual range of composition of these rocks is from andesite to rhyolite. Much of the thermal anomaly is underlain by these rocks. With a few exceptions Phillip' uranium and geothermal exploration holes were collared in, and bottomed in this unit which is at least

several thousand feet thick. As a whole the unit is quite monotonous, yet in detail shows much horizontal and vertical variation. No good marker beds have yet been recognized.

Disconformably overlying these tuffs is a 30 to 300 foot thick sequence of basalt flows and flow breccias informally known as the basalt of Coleman Rim. This basalt has been dated at from 8.5 m.y. to 10.5 m.y. Small mafic dikes and sills which may have been feeders for the basalts are present in the prospect area.

The youngest volcanic rocks in the area are a cluster of six northwest trending, steepsided, rhyolite domes. These domes have given K-Ar dates slightly older than seven million years old (MacLeod and others, 1975). The domes are easily visible in the field, having up to 800 feet of relief.

There are no Quaternary or Holocene volcanic rocks in the prospect area or in the region. Similarly no hot springs, fumaroles, hot spring deposits, or other surficial thermal features are present. At the White King mine, located near the eastern edge of the thermal anomaly in section 30, T37S-R19E, there is intense hydrothermal alteration associated with a rhyolite dome which gives a K-Ar date of 7.0 m.y. There are also traces of cinnabar at the White King Mine. For geothermal purposes it would be preferred that the alteration and mercury mineralization be recent. Walker (1980) prefers a model whereby the alteration developed during and shortly after emplacement of this dome into water saturated rocks along a large fault. If this is true, the alteration is about seven million years old. The temperature gradients near the White King mine are not very high, ranging from 2.6 to a questionable 7.2^{o}F/100 feet. This suggest that little or no heat remains from the alteration producing event especially as the deeper holes give lower gradients.

The geology in and around the prospect area provides little evidence that magma chambers exist at shallow depths or that a commercially viable geothermal reservoir is present.

The geologic structure in the prospect area consists of a 20 mile-wide antiform with its axis oriented N 20^{o}-25^{o}W. This antiform is defined by the dips on the basalt of Coleman Rim, gently southwest to the west of the prospect and gently northeast to the east of the prospect. Along the axis of the antiform, the belt of rhyolite domes has intruded the older andesites and basalts, and the overlying tuffs. Within the antiform, a large number of northwest trending faults and a few northeast trending faults are present. The rhyolite domes tend to occur along these faults or at intersections.

SHALLOW TEMPERATURE-GRADIENT HOLES

Plates 1 and 2 show the shallow thermal anomaly which defines the Lakeview prospect. The individual temperature profiles are shown in Appendix 1. Gradients shown on Plate 1 are based on the deepest linear part of the profile above a depth of 500 feet. Plate 1 shows what appears to be three separate anomalies. The northwestern anomaly, located in the southwest part of T36-R18E has not been entirely delineated. It is basically a one-point anomaly centered on hole L-10 with an open northeastern side. Data from the 12,093 foot Humble Oil test strongly suggest that this well is outside any thermal anomaly so this anomaly should be quite small. Figure 2 shows the temperature data from the Humble Oil test. Two types of data are presented. First the circulating mud temperatures which were taken from the lithologic log are shown as dots. The maximum mud temperature was 157^{o}F when the hole was 11,800 feet deep. It is not stated on the lithologic log where the mud

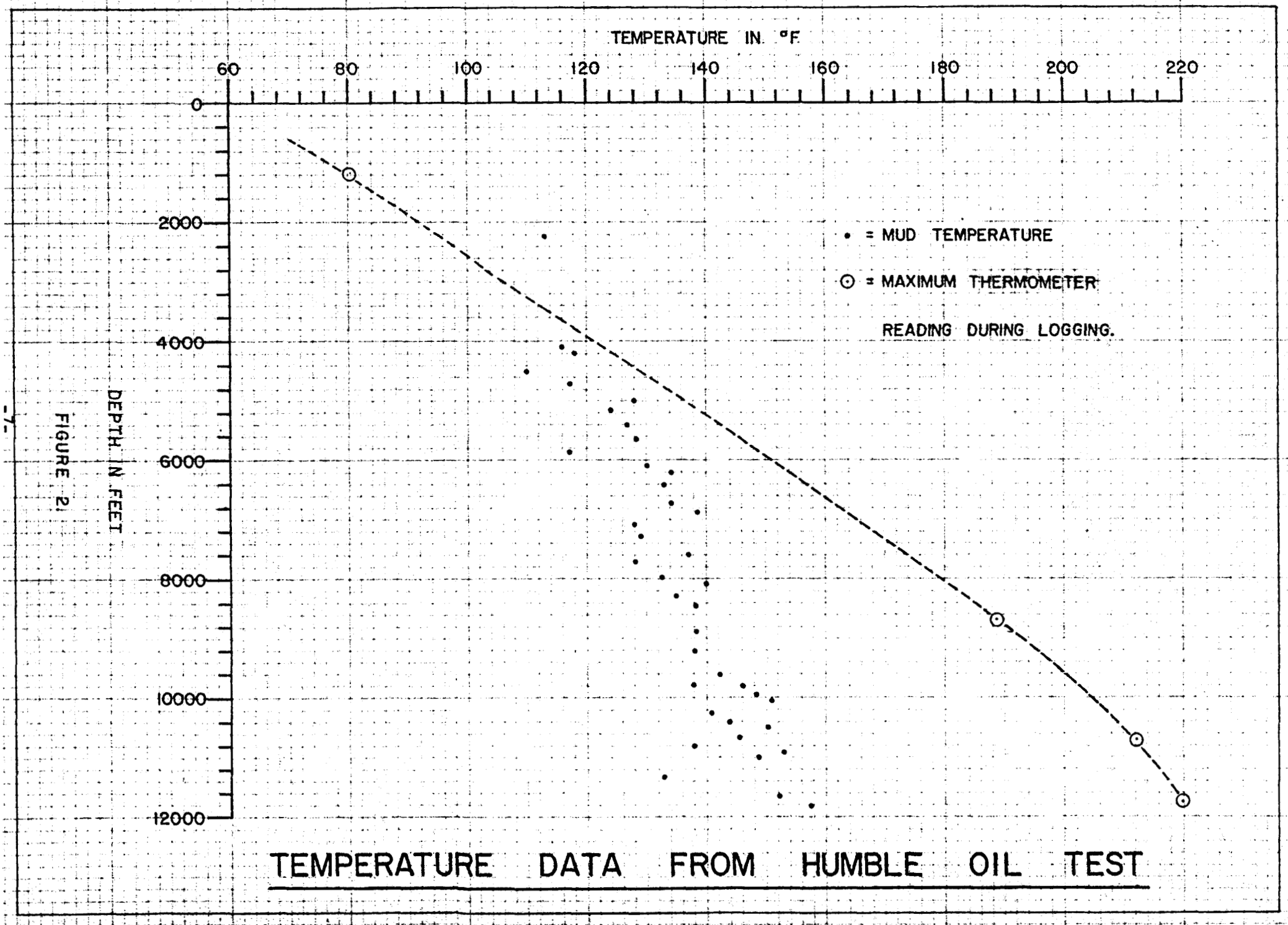


FIGURE 2

TEMPERATURE DATA FROM HUMBLE OIL TEST

temperature was measured. The second type of data, shown by the circled dots, are temperatures obtained from maximum reading thermometers during logging operations. The maxiumum recorded temperature is 220°F but it is not known how long after circulation the temperature was obtained.

This data shows that the Humble Oil test is not located close to a geothermal reservoir. An average thermal gradient of 2.0°F/100 feet over the length of the hole would put the equilibrium temperature at about 286°F at 11,800 feet. If there are no temperature reversals in this well, the gradient to a depth of 11,800 feet should be near 2°F/100 feet. It is likely that this thermal anomaly is the result of movement of slightly warm water near the surface.

The most significant thermal anomaly covers most of the east half of T37S-R18E. It is suspected that there are actually two anomalies in this area so they will be discussed separately.

The southern anomaly is centered on the rhyolite dome, informally referred to as the Thomas Creek Dome, in section 27, T37S-R18E. With the available data this anomaly contours as a bulls-eye and covers four or five square miles with near-surface temperature gradients greater than 6°F/100 feet.

The northern anomaly has a distinct northwesterly trend and covers about five square miles. The eastern boundary of this anomaly has not been well located as this land is private and was not leased by Phillips. Within the thermal anomaly, one case stands out as a classic example of the problems encountered in preparing and interpreting a temperature gradient map. Hole K-10 which is 410 feet deep (Appendix 1) has an irregular profile which shows a rapid increase in gradient near its bottom to 7.2°F/100 feet. Yet a short distance away, hole K-26 which was drilled several years later gives a linear

profile with a gradient of 2.8°F/100 feet to a depth of 990 feet. By contouring the 2.8°F/100 feet gradient instead of the earlier 7.2°F/100 feet gradient the eastern end of the anomaly substantially decreases in size.

The background thermal gradients in the prospect area are usually from 2.5 to 5°F/100 feet. This is quite high. Part of this can be explained by an expected low thermal conductivity in the soft, clay-rich ash flow tuffs and tuffaceous sediments which were encountered by most of the holes. However, part of this high background is probably the result of abnormal heat flow over a large area.

The highest temperature gradient measured in the prospect is 10°F/100 feet and the highest temperature recorded at a depth of 500 feet or less is 97.4°F. This is not very impressive when compared with near-surface gradients and temperatures found over known geothermal reservoirs in the same geologic province in Nevada where temperature gradients of 30°F/100 feet and temperatures of 250°F can be found above depths of 500 feet.

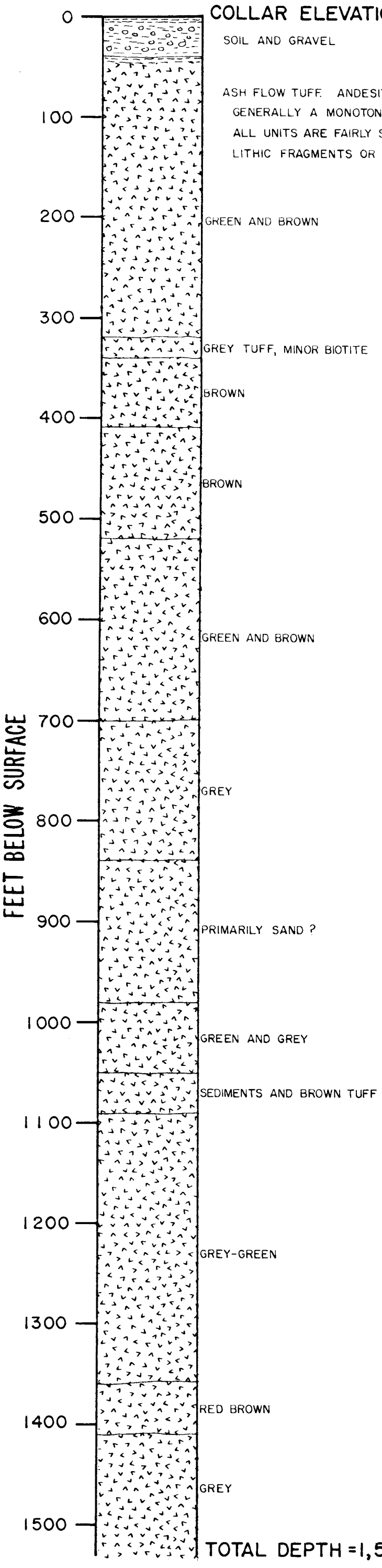
STRAT. TESTS

Strat Test #1

After all the shallow temperature gradient holes had been completed (except for K-26), strat. test #1 was drilled between September 6 and 15, 1980, to a depth of 1530 feet. This strat. test was simply located near the heart of the temperature gradient bulls-eye defining the southern thermal anomaly in SE¼ SE¼ section 27, T37S-R18E.

Strat. test #1 is located immediately adjacent to the Thomas Creek dome but encountered only ash-flow tuffs and tuffaceous sedimentary rocks

FIGURE 3.



Lithologic Log of Lakeview

STRATIGRAPHIC TEST NO. 1

LOCATION: SE 1/4, SE1/4, Section 27, T37S, R18E, Lake County, Oregon

DATE STARTED: 9/6/80

DATE COMPLETED: 9/16/80

TEMPERATURE PROFILES FROM LAKEVIEW STRAT. TEST # 1

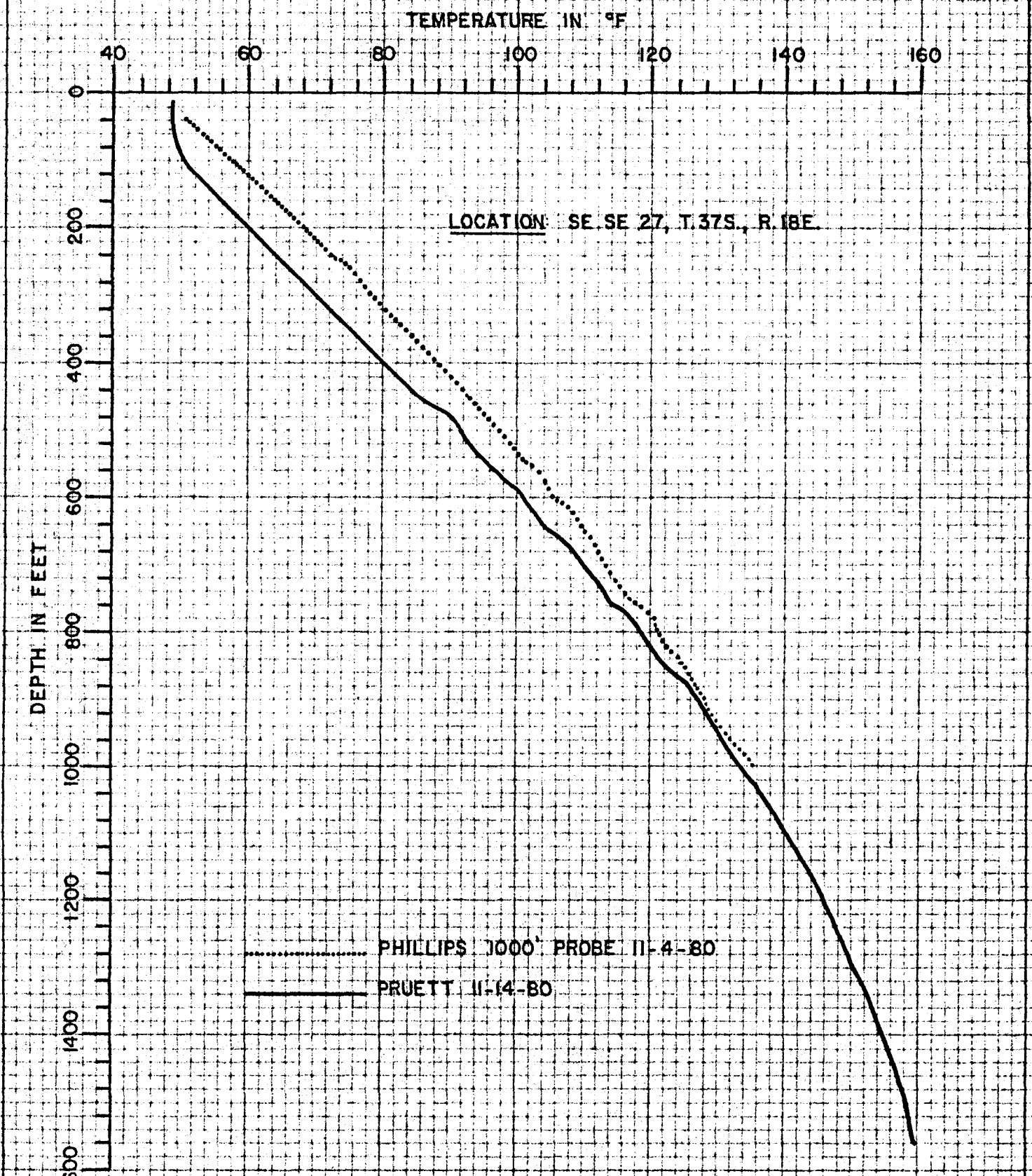


FIGURE 4.

underground. Apparently the dome has the form of a mushroom with a narrow feeder beneath the dome. A lithologic log of strat. test #1 is shown as Figure 3.

Temperature profiles from strat. test #1 are shown on Figure 4. The latest profile by Pruett on November 14, 1980, is believed to represent equilibrium conditions. All profiles show a continuous decrease in gradient with depth. At the top of the hole the gradient is 10^{o}F/100 feet. At the bottom of the hole the gradient is 3.5^{o}F/100 feet. The gradient probably continues to decrease below 1530 feet. If the gradient remained constant, a temperature of 400^{o}F would be present at a depth of 8400 feet. This is not regarded as encouraging as the 8400 foot figure is probably a minimum depth.

Nathanson (1979) has listed three different ways a profile similar to this could be generated. First, thermal water could rise steeply up a nearby fault, in this case, possibly beneath the adjacent rhyolite dome which is probably located over a fracture intersection. Secondly, there could be upflow of water in a porous medium. Third, there could be horizontal flow of water that is losing or gaining energy in the direction of flow. Whatever mechanism is moving the heat up near the surface and causes the curvature is not overly important as it is unlikely that a viable reservoir is present at acceptable depths under this thermal anomaly.

Strat. Test #2

Strat. test #2 was drilled to a depth of 575 feet at Irishmans Campground in the NE¼ SW¼ section 11, T37S-R18E between September 16 and 23, 1980. The hole was terminated when warm artesian water was encountered which could not be easily plugged. The water temperature was 108^{o}F. A water sample

was collected and is discussed in the geochemistry section. No temperature profile was obtained and no lithologic log has been constructed. Nearby holes have linear profiles so it is assumed strat test #2 also has a linear profile to the aquifer.

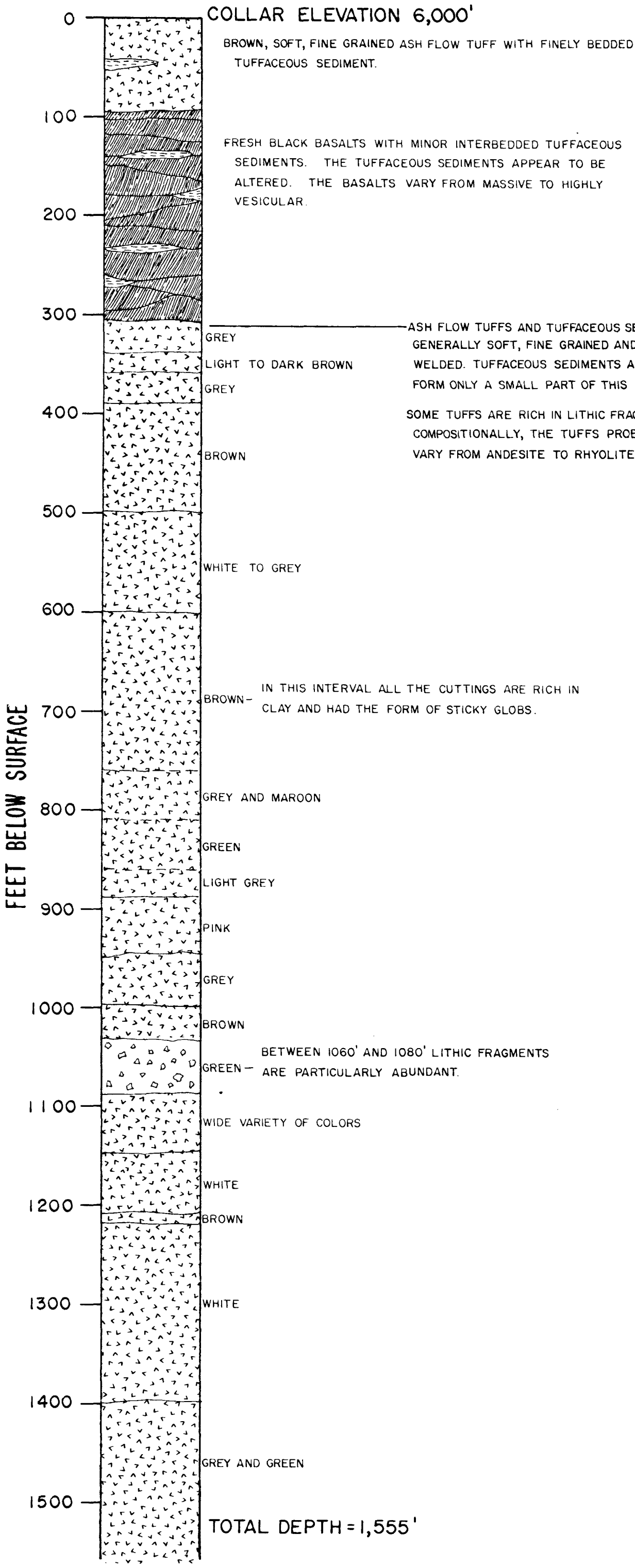
Strat. test #2 was located to evaluate the high temperature gradients in sections 10 and 11. Now that the warm artesian water has been discovered it is expected that the high temperature gradients in this area will either become isothermal or, more likely, reverse at depths between 500 and 1000 feet. It is assumed that this water, under artesian pressure, is flowing downhill in response to gravity. If so, then the high gradients in sections 10 and 11 may simply reflect its closest approach to the surface below the valley bottom.

Strat. Test #3

Strat. test #3 was located to be near to the expected source of the thermal aquifer discovered in strat. test #2. It is located in SE¼ NE¼ section 14, T37S-R18E and was drilled to a depth of 1555 feet between October 17 and 26, 1980. At 1550 feet circulation was lost and the drill pipe became stuck in the hole. The drill pipe was eventually shot off at 1162 feet and the hole was completed to a depth of 1090 feet with tubing.

A lighologic log of strat. test #3 is shown on Figure 5. Below 310 feet a variety of soft ash-flow tuffs with much lesser tuffaceous sediments were encountered. This is the same unit present in strat. test #1. Between 95 feet and 310 feet, fresh black basalt with minor interbedded tuffaceous sediments is present. This unit is most likely the basalt of Coleman Rim, which has been down faulted. From the surface to 95 feet soft brown tuff is present. It is possible that this part of the section belongs to the Auger

FIGURE 5.



Lithologic Log of Lakeview

STRATIGRAPHIC TEST NO. 3

LOCATION: SE 1/4,NE1/4, Section 14, T37S, R18E, Lake County, Oregon

DATE STARTED: 10/17/80

DATE COMPLETED: 10/26/80

TEMPERATURE PROFILES FROM LAKEVIEW STRAT. TESTS 3 AND 4

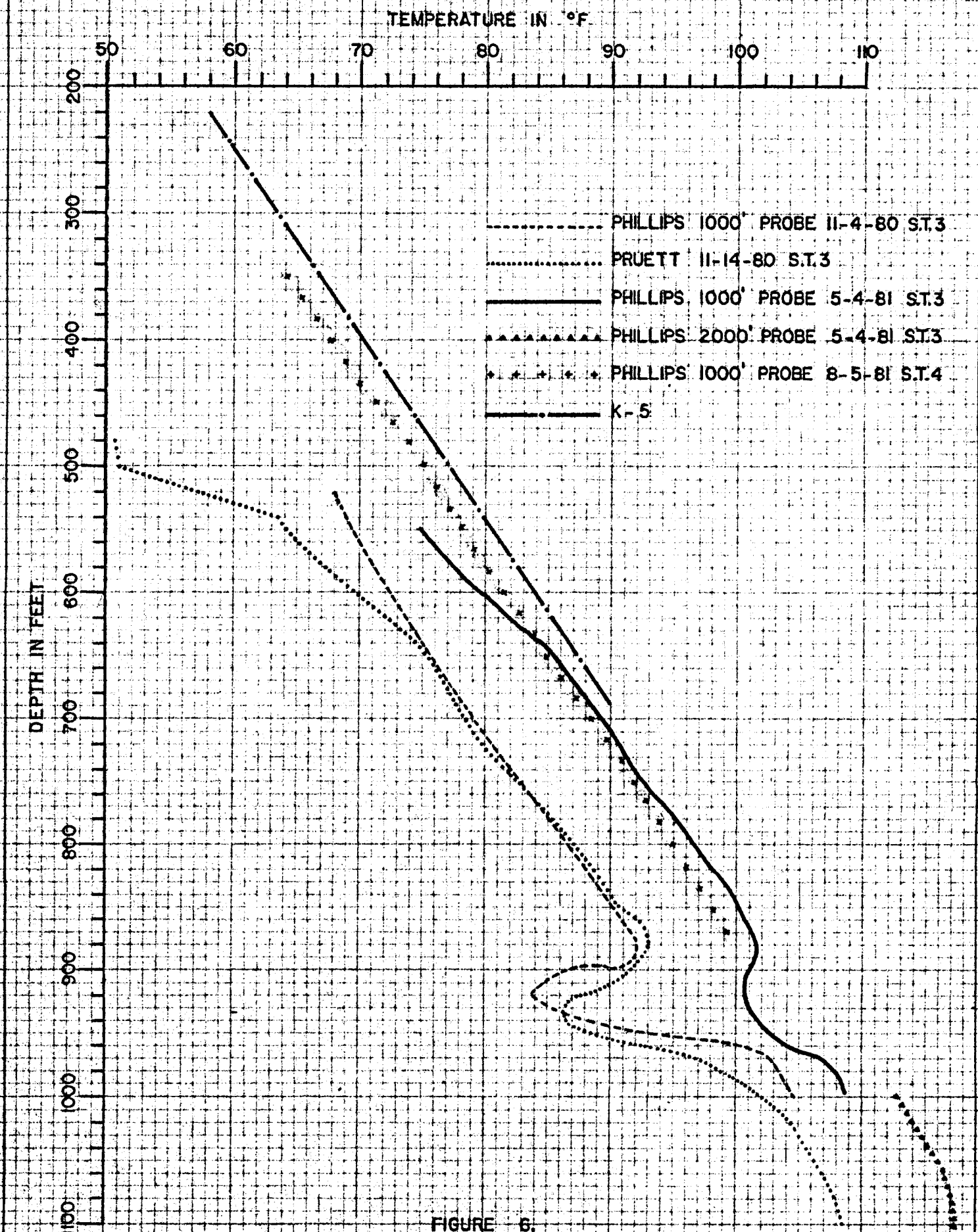


FIGURE 6.

Creek Formation (Cohenour, 1960) which is exposed a few miles away in the White King mine. area.

Temperature profiles for strat. test #3 are shown on Figure 6. There was no water in the tubing above a depth of 520 feet. Therefore, the temperature profile for shallow hole K-5 is also shown. K-5 is located about 1/8 mile east of strat. test #3. The K-5 and strat. test #3 profiles are parallel but do not match up. This is due to calibration differences between the different probes used. To a depth of 880 feet the temperature profile is linear. Between 890 and 920 feet the temperature decreases. At 920 feet a relatively minor lost circulation zone was encountered during drilling. This temperature reversal is the result of the lost drilling fluid. On November 4, 1980, eight days after completion the temperature decreased 8.3°F. On November 14, 1980, the temperature decrease was 6.3°F. By May, 1981, the temperature decrease was down to about 1°F. If the temperature reversal is removed from the profile, the temperature gradient is reasonably constant to a depth of 1080 feet where another lost circulation zone occurred during drilling. At the bottom of the hole the temperature gradient on both the Pruett and Phillips profiles shows a noticeable decrease which could represent either equilibrium conditions or lost drilling fluid. In either case this data cannot be reliably extrapolated. The most optimistic extrapolation of this profile would be to simply extend the temperature profile. The temperature gradient above 1000 feet averages 6.5°F/100 feet. Extrapolation of this profile yields an estimated depth of 5385 feet to the 400°F isotherm. However, the temperature gradient between 1080 and 1100 feet is decreasing so this probably represents a minimum and optimistic depth. In short, this hole is not deep enough to provide reliable data which can predict the deeper thermal structure.

Strat Test #4

As strat. test #3 provided ambiguous results, it was decided to attempt a fourth strat. test about 500 feet southeast of strat. test #3. Strat. test #4 was drilled to a depth of 1196 feet between July 2 and July 25, 1981, where circulation was lost. The drill pipe was cemented in the hole during attempts to recover circulation. Ultimately, 880 feet of pipe were retrieved and the hole was completed to a depth of 860 feet. In light of the information available from strat. test #3, strat. test #4 does not give the needed temperature data. The temperature profile from strat. test #4 is also shown on Figure 6. No lithologic log has been prepared for strat. test #4.

GEOCHEMISTRY

There are numerous water sampling points available within the thermal anomaly. These consist of springs and seeps, both seasonal and annual, and streams (Plate 3). There are no known warm springs in the area and no anomalously warm springs were located during the brief sampling program. During the drilling of strat. test #2, warm artesian water with a temperature of 108°F was encountered at a depth of 568 feet. A murky water sample was collected by the drillers as the drill site is not well drained and is only a few feet away from a small stream; it was not possible to allow the hole to flow for an extended period of time. The thermal water sample was not diluted or acidified prior to shipment to the laboratory.

The non-thermal waters are with two exceptions dilute Na-Ca-Mg-HCO_3 waters (Plate 4 and Plate 5). The two exceptions are samples #362 and L-22 which are dilute Na-HCO_3 waters. These waters are all low in Cl, B, NH_4 and Li but relatively high in silica with up to 71 ppm. This high silica is the result

of the waters being in contact with fine-grained siliceous ash flow tuffs which easily give up silica from volcanic glass. Chemically these water samples give no indication of the presence of condensed steam or saline geothermal brines in the area.

The thermal water from strat. test #2 is a dilute Na-HCO_3 water. This water is more saline than the non-thermal waters in the area but is very dilute when compared with thermal waters from high temperature geothermal systems.

It is unlikely that this water originated in a 400°F or hotter geothermal reservoir. The silica content of 110 ppm, assuming conductive cooling and equilibrium with quartz, suggests a subsurface temperature of 143°C. However, the high background silica values in non-thermal waters suggests that silica minerals other than quartz are controlling the silica content. In this case the predicted temperature will be lower than 143°C, probably substantially lower. The Na-K geothermometer suggests a subsurface temperature of 147°C but this value is also suspect. In the thermal water from strat. test #2 there is 5.65 ppm potassium. In the non-thermal waters the potassium content varies from 1.2 to 7.5 ppm. Therefore, the thermal has approximately the same potassium content as the non-thermal waters. The thermal water clearly has been enriched in sodium but it is possible that the thermal water has not dissolved enough sodium to attain equilibrium. Therefore, the predicted temperature of 147°C could easily be too high.

The sodium-potassium-calcium geothermometer has also been applied to the warm artesian water. With B = 1/3 the predicted temperature is 169°C and with B = 4/3 the predicted temperature is 134°C. Conventional use of this geothermometer suggests the higher temperature is preferred.

Lastly, a mixing model for the thermal water was calculated using Model 1 presented in Fournier and others (1974). Predicted temperatures of a

possible deeper thermal water range from about 225°C to 275°C depending on the background temperature and silica values chosen.

It is felt that these mixing temperatures are unrealistically high, suggesting that mixing is not playing a major role in determining the chemistry of the warm water encountered in strat. test #2. In the authors experience it is typical that mixing models yield unrealistically high predicted temperatures when applied to dilute relatively cool thermal waters.

In summary, the limited geochemistry available has not detected the presence of 400°F geothermal fluid in the prospect area. The chemical geothermometers suggest possible reservoir temperatures of 143-169°C but these are suspected of being unrealistically high.

CONCLUSIONS

A large "blind" thermal anomaly has been outlined in the Lakeview Prospect. The anomaly appears to be composed of two anomalies. The southern of these two anomalies has been tested with a 1530-foot deep strat. test. The temperature data from this strat. test profile indicate little potential for discovery of a viable geothermal reservoir beneath this anomaly.

Temperature data from the northern thermal anomaly are available only to a maximum depth of 1090 feet. It is suspected that the most intense part of the northern anomaly is a result of subhorizontal movement of warm water at shallow depths. This water was encountered in strat. test #2. The southeastern part of this anomaly near strat. tests #3 and #4 is believed to offer the best remaining potential in the area. However, the drilling problems encountered to date and the lack of additional independent evidence of a viable geothermal system suggest that deeper drilling in this area will not be encouraging.

The available geochemistry does not indicate the presence of a 400°F reservoir in the area.

In summary, the thermal anomaly has not been completely condemned, however, there is no other independent evidence indicating the presence of a viable geothermal reservoir.

RECOMMENDATIONS

In late 1978 and early 1979, Phillips Petroleum obtained geothermal leases on 3097 acres of fee land and applied for geothermal leases on about 65 sections of Federal land. These Federal leases have not been issued.

It is recommended that all work on the Lakeview Prospect be terminated and that all private leases be terminated. The Federal lease applications should be withdrawn. The strat. test locations also need to be abandoned.

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APPENDIX I

Prospect Lakeview Hole L-1

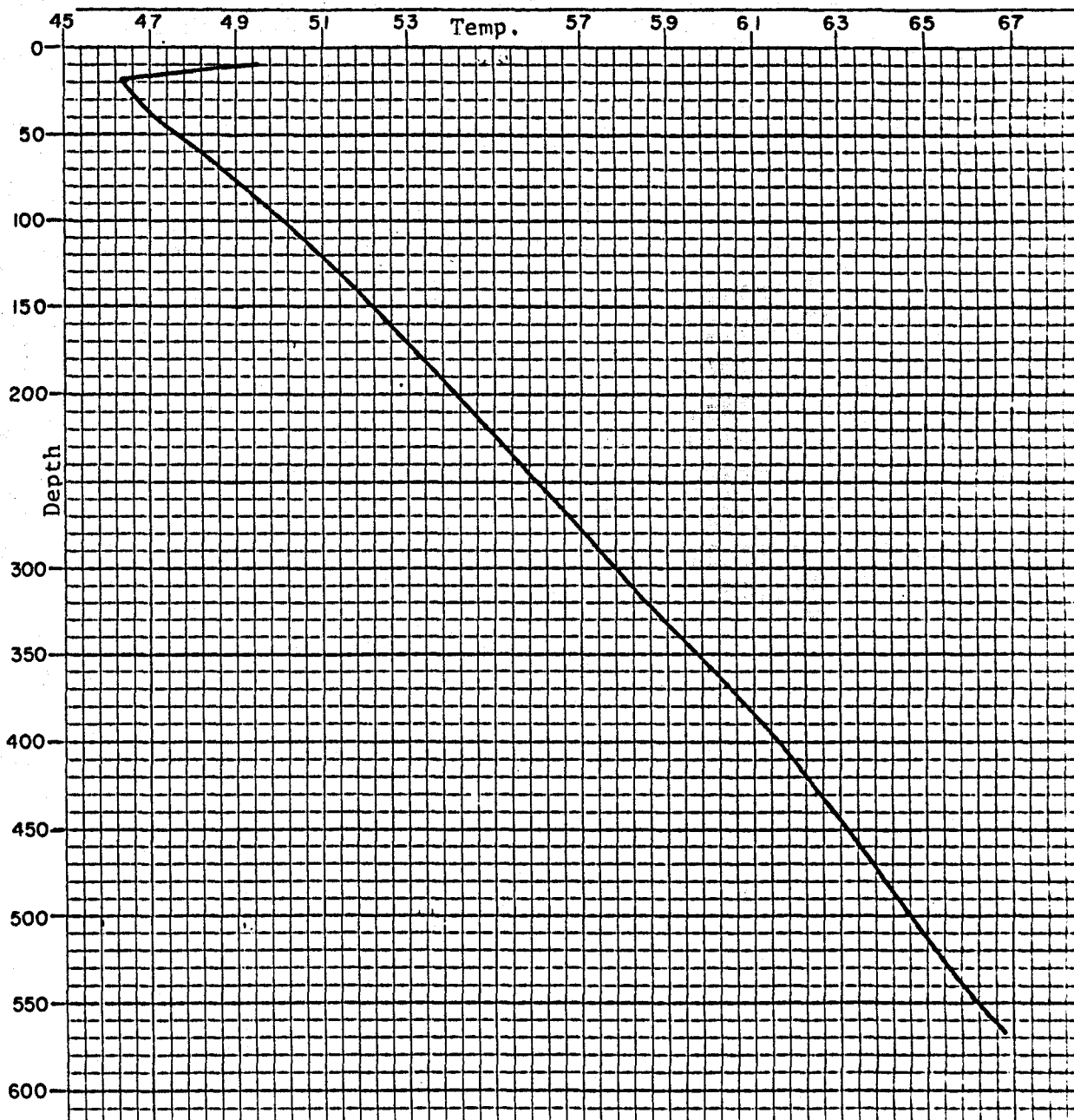
Probe Box Cable

Location T38S-R19E, NW SW 7 Grad. 3.1°F/100' from 400-560

Comments Completed September 12, 1978. Drilled to 840 feet but the hole closed off.

Date Time Opr
9/25/78

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.75	49.5	310	14.5	58.1			
20	8.0	46.4	320	14.65	58.4			
30	8.1	46.6	330	14.9	58.8			
40	8.35	47.0	340	15.1	59.2			
50	8.65	47.6	350	15.3	59.6			
60	8.95	48.1	360	15.5	59.9			
70	9.2	48.6	370	15.7	60.3			
80	9.45	49.0	380	15.95	60.7			
90	9.75	49.5	390	16.2	61.2			
100	10.05	50.1	400	16.4	61.5			
110	10.25	50.5	410	16.55	61.8			
120	10.5	50.9	420	16.75	62.2			
130	10.7	51.3	430	16.9	62.4			
140	10.95	51.7	440	17.1	62.8			
150	11.15	52.1	450	17.25	63.1			
160	11.35	52.4	460	17.45	63.4			
170	11.6	52.9	470	17.6	63.7			
180	11.8	53.2	480	17.75	64.0			
190	12.05	53.7	490	17.9	64.2			
200	12.25	54.0	500	18.05	64.5			
210	12.45	54.4	510	18.2	64.8			
220	12.65	54.8	520	18.35	65.1			
230	12.85	55.1	530	18.6	65.5			
240	13.05	55.5	540	18.75	65.8			
250	13.3	55.9	550	18.95	66.1			
260	13.5	56.3	560	19.15	66.5			
270	13.7	56.7	567	19.3	66.7			
280	13.85	57.0						
290	14.1	57.4						
300	14.3	57.7						



Prospect Lakeview Hole L-2

Location T37S-R18E, NW NW 27 Grad. 7.5°F/100' from 120-340'

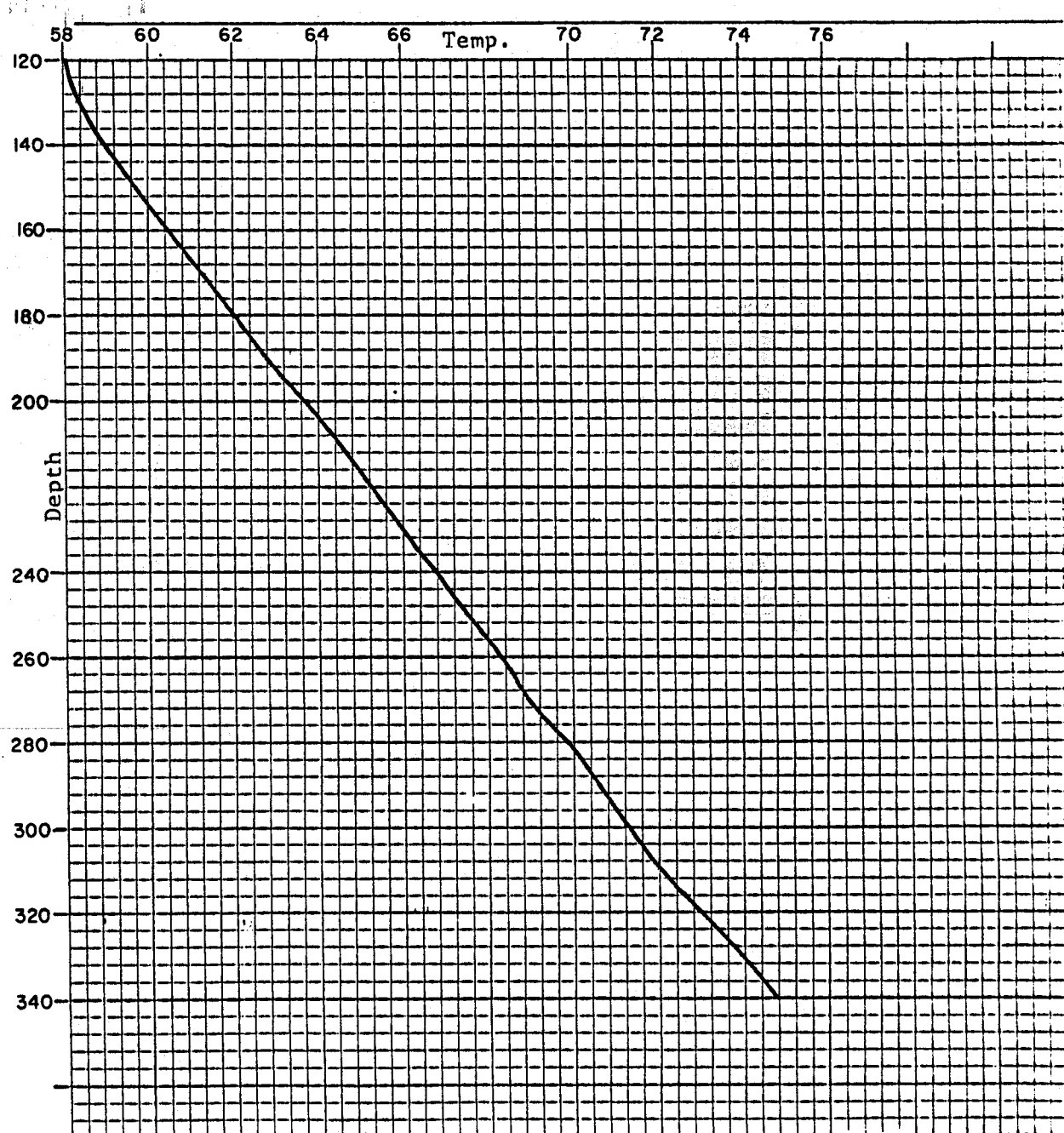
Probe Box Cable

Comments Probed from the bottom up. Drilled to 960 feet but we could not get the pipe past 340 feet. Water level 120 feet.

Date Time Opr

9/25/78

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
120	14.5	58.1						
130	14.6	58.3						
140	14.95	58.9						
150	15.4	59.7						
160	15.8	60.4						
170	16.25	61.3						
180	16.65	62.0						
190	17.1	62.8						
200	17.6	63.7						
210	18.0	64.4						
220	18.4	65.1						
230	18.8	65.8						
240	19.3	66.7						
250	19.75	67.5						
260	20.15	68.3						
270	20.5	68.9						
280	21.0	69.8						
290	21.45	70.6						
300	21.8	71.2						
310	22.2	72.0						
320	22.75	72.9						
330	23.3	73.9						
340	23.7	74.7						



Prospect Lakeview Hole L-3

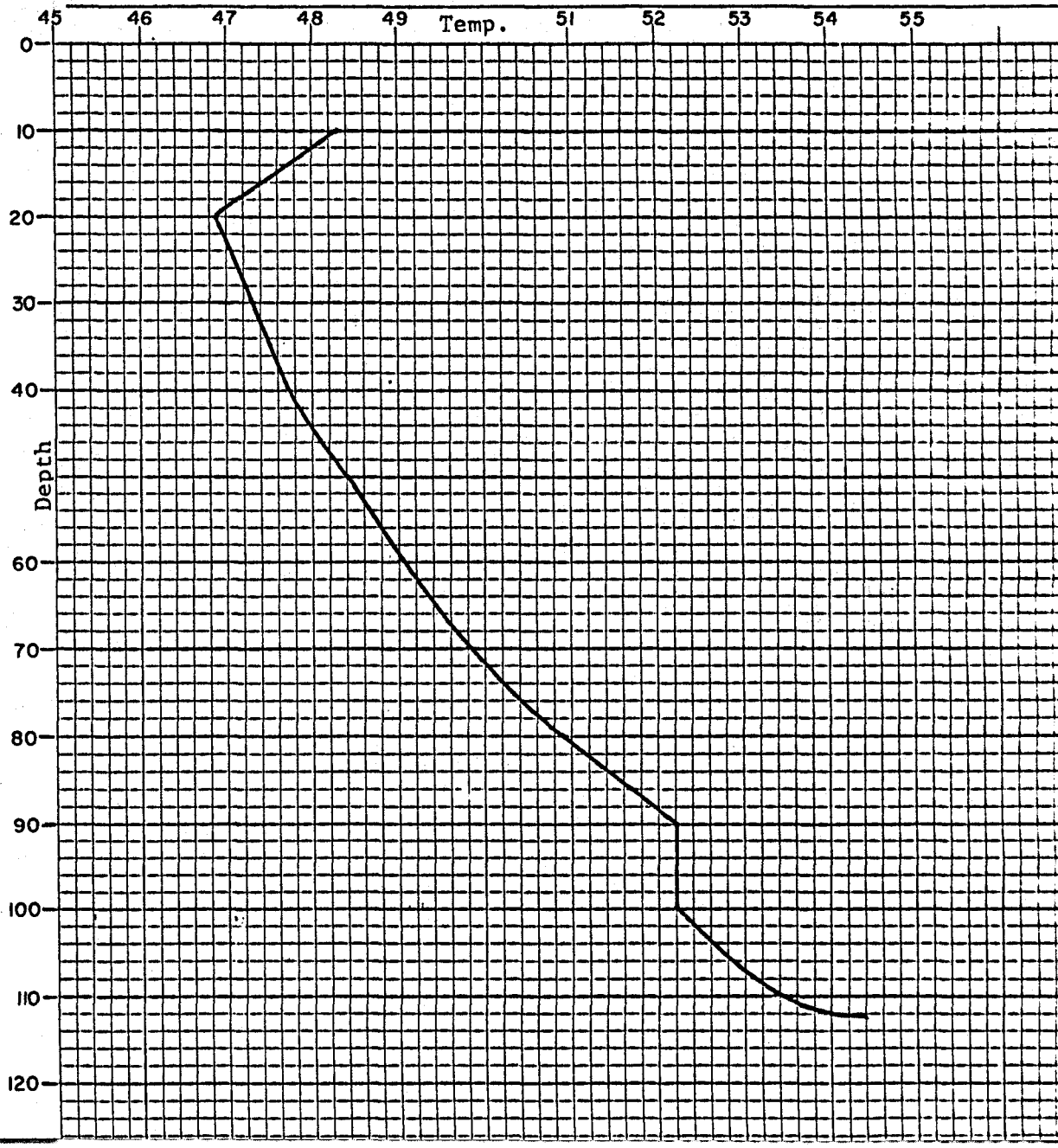
Probe Box Cable

Location T37S-R18E, SE NE 10 Grad 9.6°F/100' from 60-110'

Comments Hole was drilled to 1000 feet. Only 142 feet of PVC was run due to a bridge. There was also water running through the hole. We could hear it. Drilled to 1000 feet.

Date 9/26/78 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.05	48.3						
20	8.25	46.9						
30	8.5	47.3						
40	8.7	47.7						
50	9.1	48.4						
60	9.45	49.0						
70	9.9	49.8						
80	10.5	50.9						
90	11.2	52.2						
100	11.2	52.2						
110	12.1	53.8						
112.5	12.45	54.4						

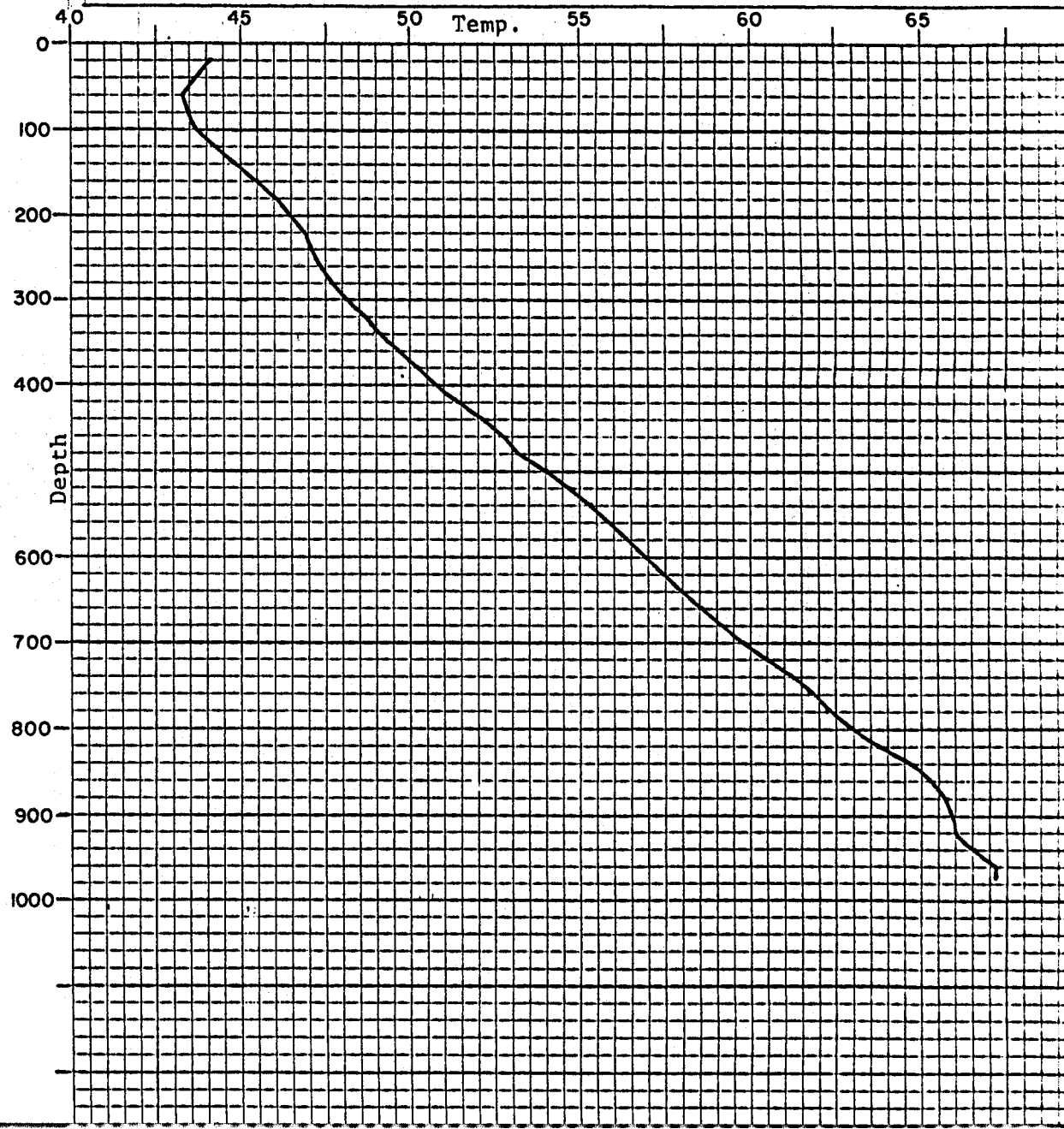


Prospect Lakeview Hole L-4 Location T37S-R18E NW SE 25 Grad 2.9°F/100' from 300-800

Probe Box Cable Comments

Date 9/26/78 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
20	6.7	44.1	620	14.1	57.4			
40	6.5	43.7	640	14.4	57.9			
60	6.3	43.3	660	14.75	58.5			
80	6.4	43.5	680	15.05	59.1			
100	6.5	43.7	700	15.4	59.7			
120	6.7	44.1	720	15.85	60.5			
140	7.1	44.8	740	16.2	61.2			
160	7.45	45.4	760	16.5	61.7			
180	7.8	46.0	780	16.75	62.2			
200	8.0	46.4	800	17.1	62.8			
220	8.2	46.8	820	17.6	63.7			
240	8.35	47.0	840	18.1	64.6			
260	8.5	47.3	860	18.45	65.2			
280	8.65	47.6	880	18.7	65.7			
300	8.95	48.1	910	18.9	66.0			
320	9.3	48.7	920	18.9	66.0			
340	9.4	48.9	940	19.15	66.5			
360	9.8	49.6	960	19.55	67.2			
380	10.1	50.2	970	19.55	67.2			
400	10.4	50.7						
420	10.8	51.4						
440	11.15	52.1						
460	11.45	52.6						
480	11.7	53.1						
500	12.2	54.0						
520	12.6	54.7						
540	12.95	55.3						
560	13.2	55.8						
580	13.5	56.3						
600	13.85	56.9						



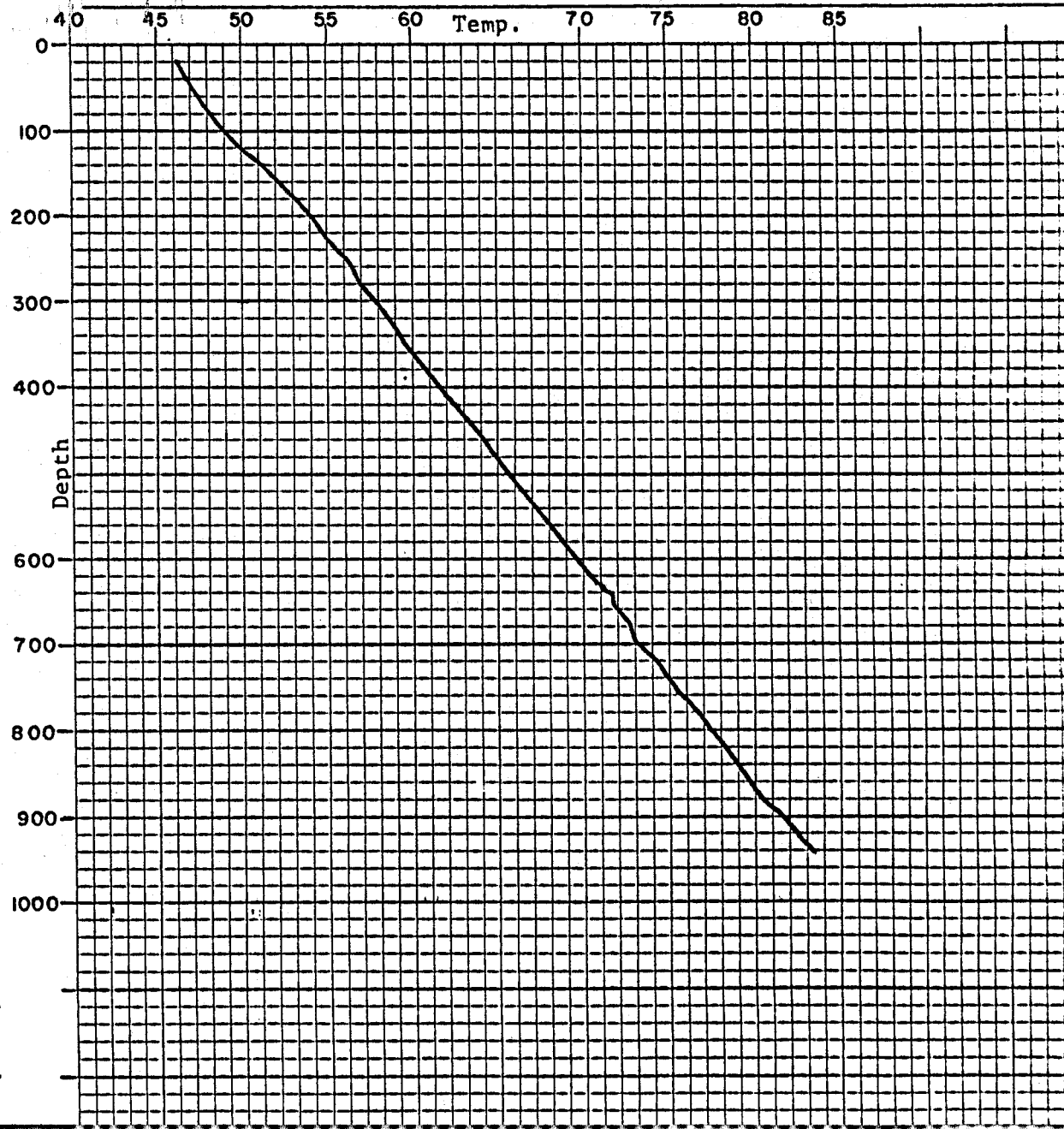
Prospect Lakeview Hole L-5 Location T37S-R18E, SE SE 26 Grad 4.0°F/100' from 140-940

Probe Box Cable Comments Hole had equilibrated for three days 70 hours

Date Time Opr

9/26/78

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
20	7.85	46.1	400	16.3	61.3			
40	8.1	46.6	420	16.75	62.2			
60	8.5	47.3	440	17.25	63.1			
80	8.9	48.0	460	17.75	64.0			
100	9.4	48.9	480	18.2	64.8			
120	9.85	49.7	500	18.6	65.5			
140	10.65	51.2	520	19.05	66.3			
160	11.1	52.0	540	19.6	67.3			
180	11.7	53.1	560	20.0	68.0			
200	12.2	54.0	580	20.35	68.6			
220	12.5	54.5	600	20.8	69.4			
240	13.0	55.4	620	21.25	70.2			
260	13.5	56.3	640	21.75	71.7			
280	13.8	56.8	660	22.15	71.9			
300	14.2	57.6	680	22.55	72.6			
320	14.6	58.3	700	22.8	73.0			
340	15.05	59.1	720	23.4	74.1			
360	15.45	59.8	740	23.9	75.0			
380	15.9	60.6	760	24.35	75.8			
			780	24.75	76.5			
			800	25.15	77.3			
			820	25.65	78.2			
			860	26.35	79.6			
			880	26.85	80.3			
			900	27.45	81.4			
			920	27.85	82.1			
			940	28.4	83.1			

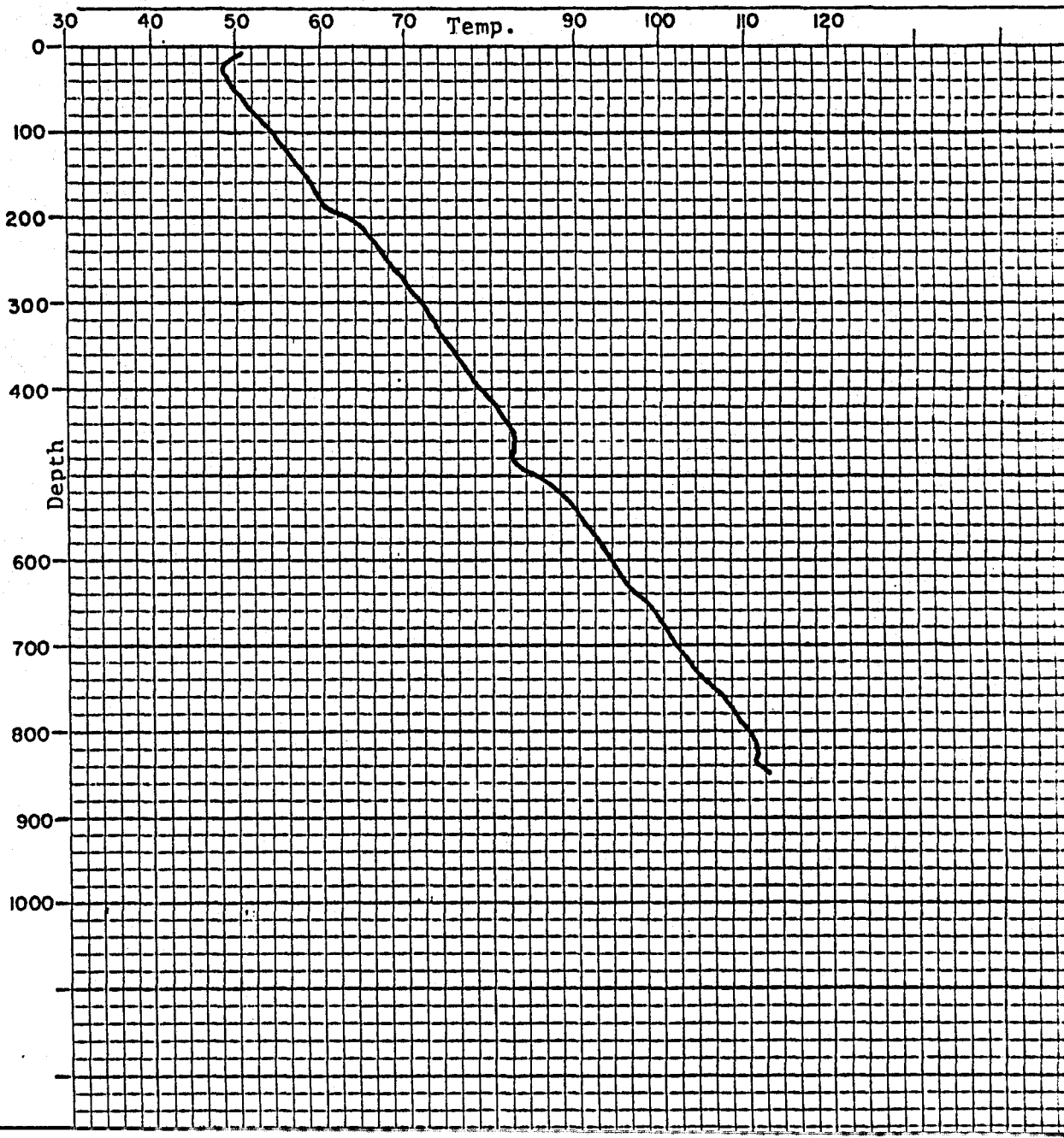


Prospect Lakeview Hole L-6 Location T37S-R18E NE SE 10 Grad. 7.4°F/100' from 300-850

Probe Box Cable Comments filled with water 5 3/4 days ago

Date Time Opr
10/3/78

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	10.4	50.7	320	22.6	72.7	630	35.15	95.3
20	9.2	48.6	330	22.95	73.3	640	35.65	96.2
30	9.1	48.4	340	23.4	74.1	650	36.4	97.5
40	9.3	48.7	350	23.6	74.5	660	36.8	98.2
50	9.8	49.6	360	24.15	75.5	670	37.25	99.1
60	10.25	50.5	370	24.65	76.4	680	37.65	99.8
70	10.7	51.3	380	25.0	77.0	690	38.05	100.5
80	11.3	52.3	390	25.25	77.5	700	38.4	101.1
90	11.8	53.2	400	25.85	78.5	710	38.95	102.1
100	12.2	54.0	410	26.3	79.3	720	39.45	103.0
110	12.65	54.8	420	26.8	80.2	730	39.85	103.7
120	13.05	55.5	430	27.2	81.0	740	40.2	104.4
130	13.5	56.3	440	27.6	81.7	750	40.85	105.5
140	13.9	57.0	450	27.95	82.3	760	41.3	106.3
150	14.4	57.9	460	28.3	82.9	770	41.8	107.2
160	14.75	58.6	470	28.15	82.7	780	42.2	108.0
170	15.15	59.3	480	27.75	82.0	790	42.7	108.9
180	15.4	59.7	490	27.95	82.3	800	43.15	109.7
190	15.7	60.3	500	29.25	84.6	810	43.6	110.5
200	17.15	62.9	510	30.05	86.1	820	43.8	110.8
210	17.9	64.2	520	30.95	87.7	830	44.0	111.2
220	18.45	65.2	530	31.5	88.7	840	43.8	110.8
230	18.95	66.1	540	31.85	89.3	850	44.55	112.2
240	19.35	66.8	550	32.15	89.9			
250	19.7	67.5	560	32.6	90.7			
260	20.1	68.2	570	33.05	91.5			
270	20.85	69.5	580	33.45	92.2			
280	21.1	70.0	590	34.0	93.2			
290	21.55	70.8	600	34.2	93.6			
300	21.9	71.4	610	34.55	94.2			
310	22.25	72.1	620	34.75	94.6			



Prospect Lakeview Hole L-7

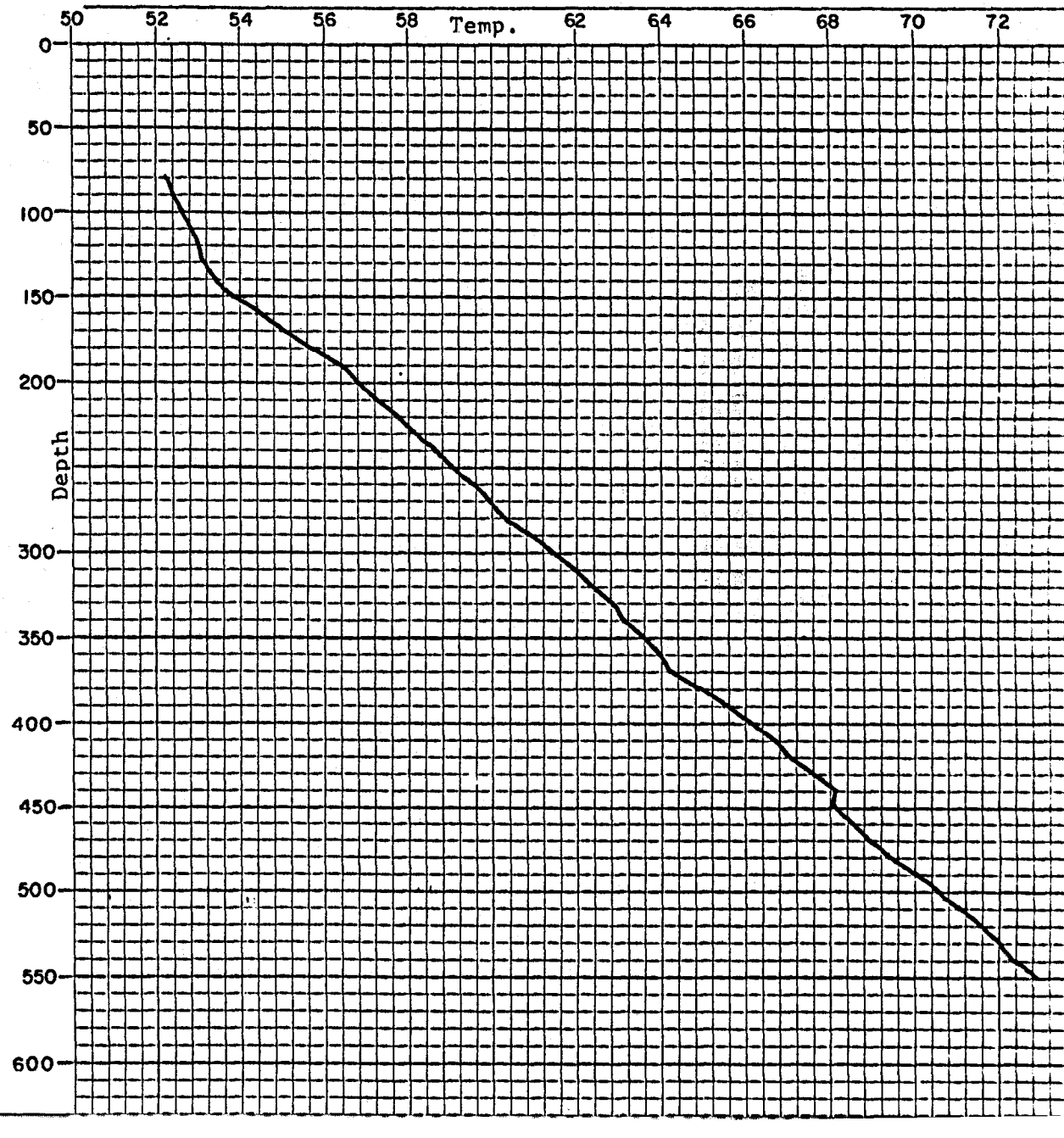
Location T38S-R18E NE SW 12 Grad 4.7°F/100' from 140-550

Comments Pipe was run open ended. Water level 72'. Pipe must have separated.

Probe Box Cable

Date 10/6/78 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
80	11.25	52.2	390	18.6	65.5			
90	11.35	52.4	400	18.95	66.1			
100	11.45	52.6	410	19.25	66.7			
110	11.55	52.8	420	19.5	67.1			
120	11.65	53.0	430	19.75	67.6			
130	11.75	53.1	440	20.05	68.1			
140	11.9	53.4	450	20.0	68.0			
150	12.05	53.7	460	20.3	68.5			
160	12.45	54.4	470	20.5	68.9			
170	12.8	55.0	480	20.8	69.4			
180	13.15	55.7	490	21.15	70.1			
190	13.55	56.4	500	21.4	70.5			
200	13.75	56.8	510	21.7	71.1			
210	14.0	57.2	520	21.95	71.5			
220	14.3	57.7	530	22.2	72.0			
230	14.5	58.1	540	22.4	72.3			
240	14.75	58.6	550	22.65	72.8			
250	15.0	59.0						
260	15.3	59.5						
270	15.5	59.9						
280	15.7	60.2						
290	16.05	60.9						
300	16.35	61.4						
310	16.6	61.9						
320	16.85	62.3						
330	17.1	62.8						
340	17.3	63.1						
350	17.5	63.5						
360	17.7	63.9						
370	17.9	64.2						
380	18.35	64.9						

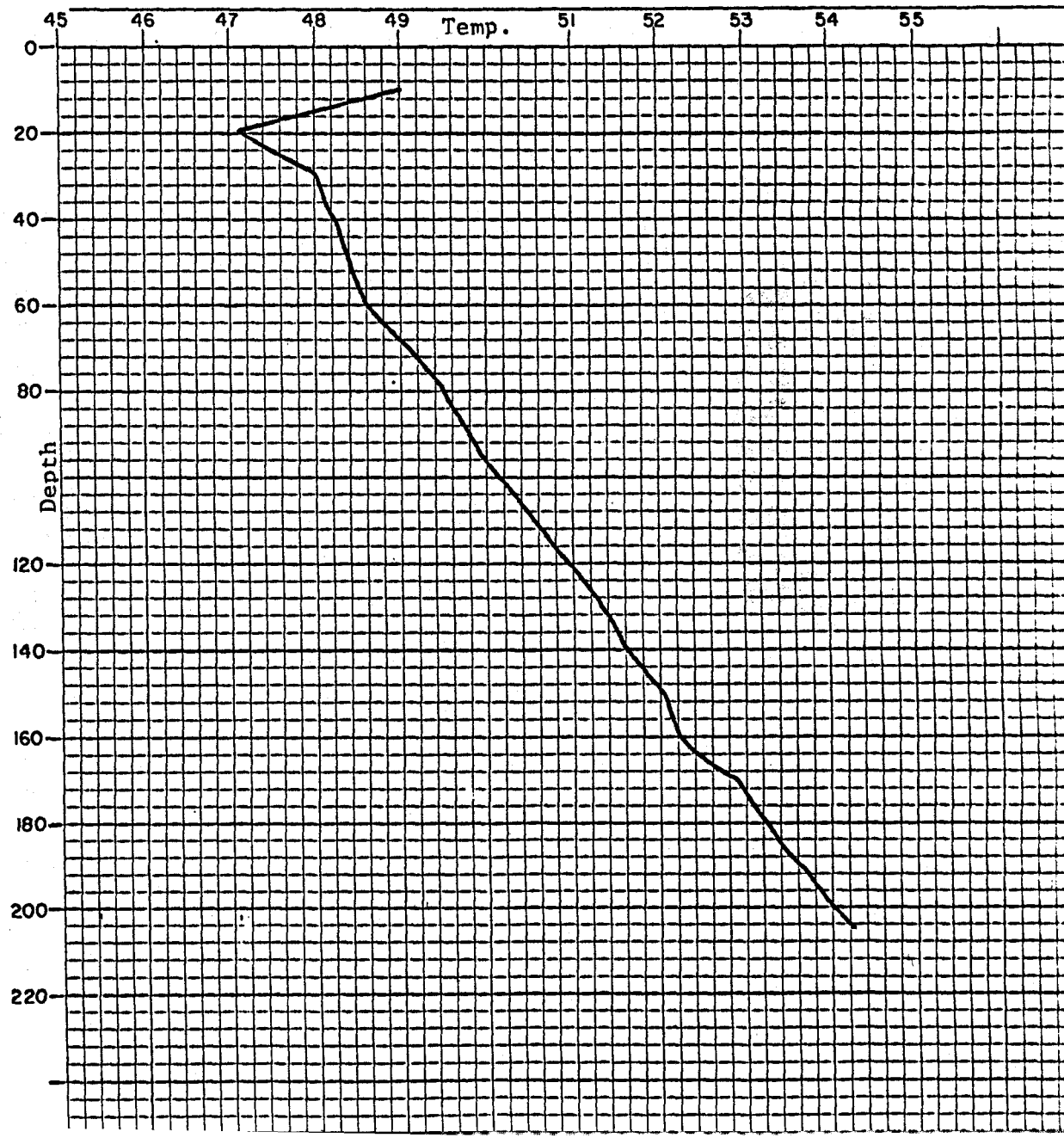


Prospect Lakeview Hole L-8 Location T37S-R18E NW NW NE 16 Grad. 3.9°F/100' from 100-200'

Probe Box Cable Comments Located on private land at north end of Cox Flat. Hole has sat for about 5½ days. Hit water at 72 feet. Abandoned 7/24/7

Date Time Opr
7/16/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.45	49.0						
20	8.4	47.1						
30	8.9	48.0						
40	9.0	48.2						
50	9.1	48.4						
60	9.35	48.8						
70	9.5	49.1						
80	9.7	49.5						
90	9.9	49.8						
100	10.05	50.1						
110	10.3	50.5						
120	10.5	50.9						
130	10.7	51.3						
140	10.9	51.6						
150	11.1	52.0						
160	11.2	52.2						
170	11.6	52.9						
180	11.8	53.2						
190	12.0	53.6						
200	12.2	54.0						
205	12.35							



Prospect Lakeview Hole L-9

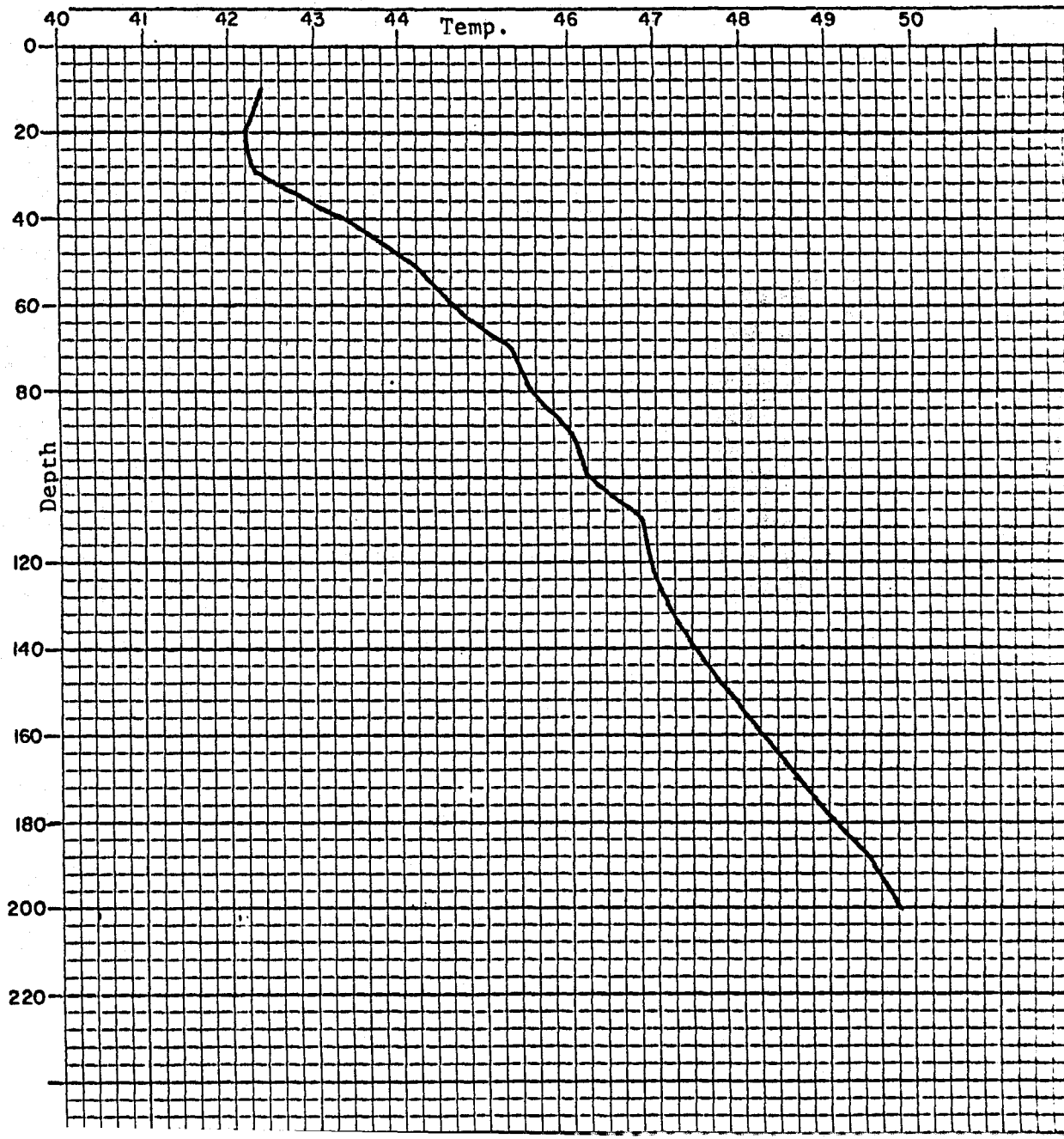
Location T37S-R18E SW SW NW 3 Grad. 3.9°F/100' from 130-200'

Probe Box Cable

Comments Hole drilled on private land. Completed 4-5 days before probing. Hit water at 62 feet. Abandoned 7/24/79

Date 7/17/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.0	42.8						
20	5.65	42.2						
30	5.7	42.3						
40	6.3	43.3						
50	6.7	44.1						
60	6.9	44.4						
70	7.4	45.3						
80	7.5	45.5						
90	7.8	46.0						
100	7.9	46.2						
110	8.2	46.8						
120	8.3	46.9						
130	8.4	47.1						
140	8.55	47.4						
150	8.8	47.8						
160	9.0	48.2						
170	9.2	48.6						
180	9.45	49.0						
190	9.7	49.5						
200	9.9	49.8						



Prospect Lakeview Hole L-10

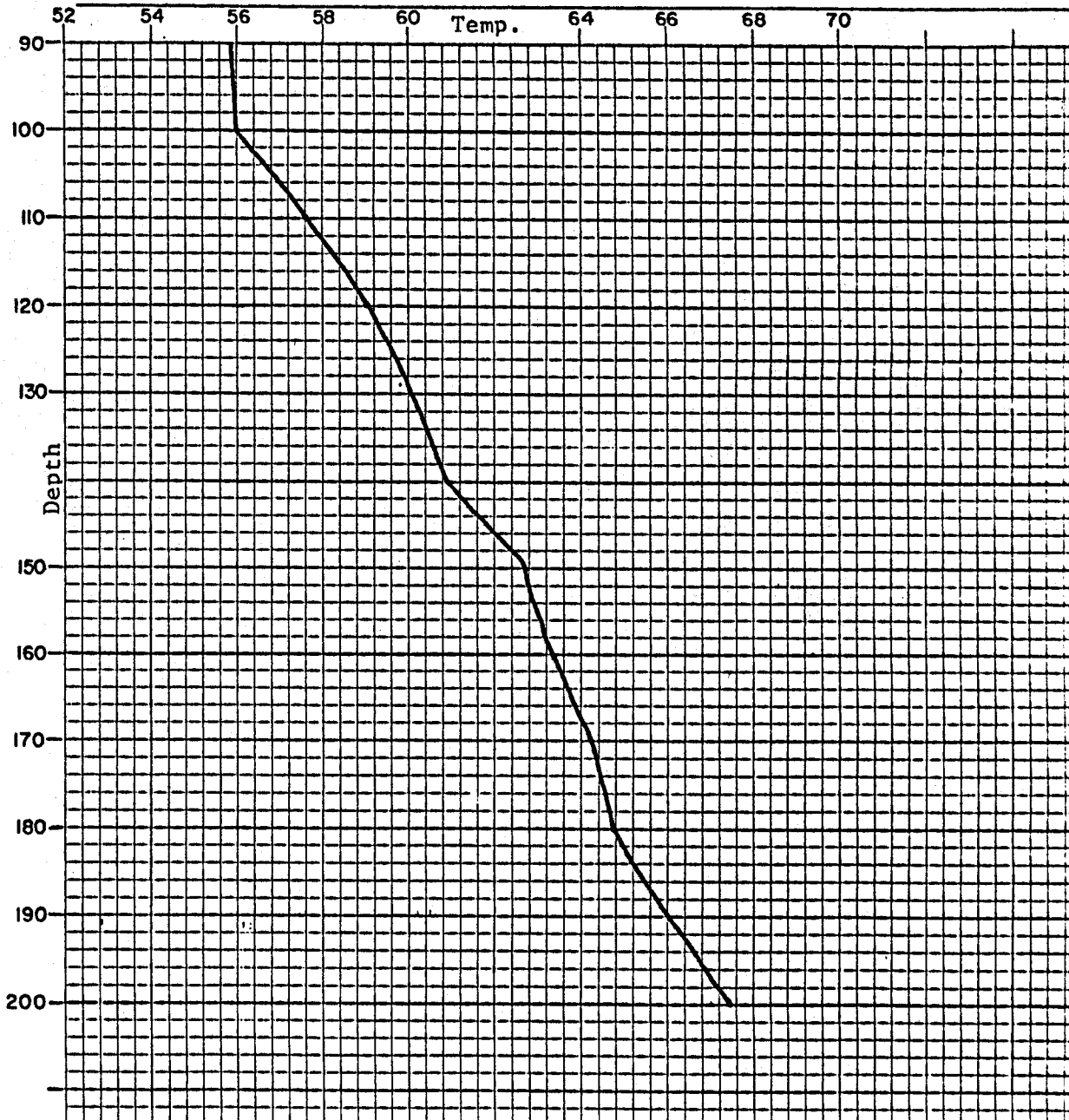
Location T36S-R18E NE SE SE 19 Grad. 10.4°F/100' from 100-200'

Comments Hole on private land just east of Murphy Ranch House. Probed about four days after completion. Dry to 90 feet we filled it up to the top. Hit water at 36 feet.

Probe Box Cable

Date Time Opr
7/17/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
90	13.3	55.9						
100	13.35	56.0						
110	14.2	57.6						
120	15.0	59.0						
130	15.55	60.0						
140	16.05	60.9						
150	17.05	62.7						
160	17.4	63.3						
170	17.9	64.2						
180	18.15	64.7						
190	18.9	66.0						
200	19.65	67.4						

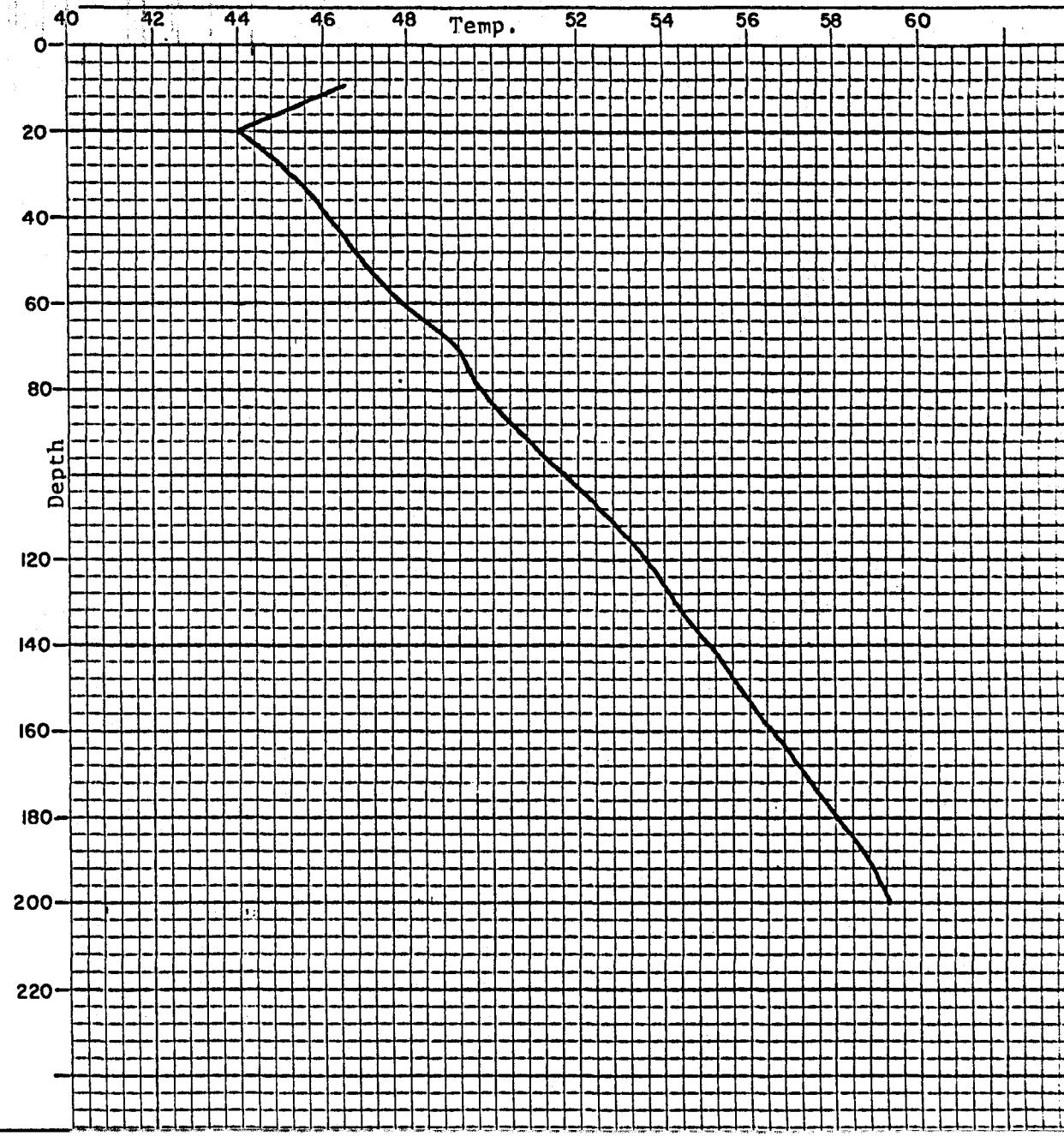


Prospect Lakeview Hole L-11 Location T37S-R18E C 34 Grad. 7.1°F/100'

Probe Box Cable Comments This is probably the best survey of this hole available.

Date 8/8/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	80.5	46.5						
20	6.65	44.0						
30	7.3	45.1						
40	7.85	46.1						
50	8.25	46.9						
60	8.8	47.8						
70	9.5	49.1						
80	9.75	49.6						
90	10.35	50.6						
100	10.9	51.6						
110	11.45	52.6						
120	11.95	53.5						
130	12.35	54.2						
140	12.8	55.0						
150	13.15	55.7						
160	13.6	56.5						
170	14.0	57.2						
180	14.45	58.0						
190	14.85	58.7						
200	15.1	59.2						

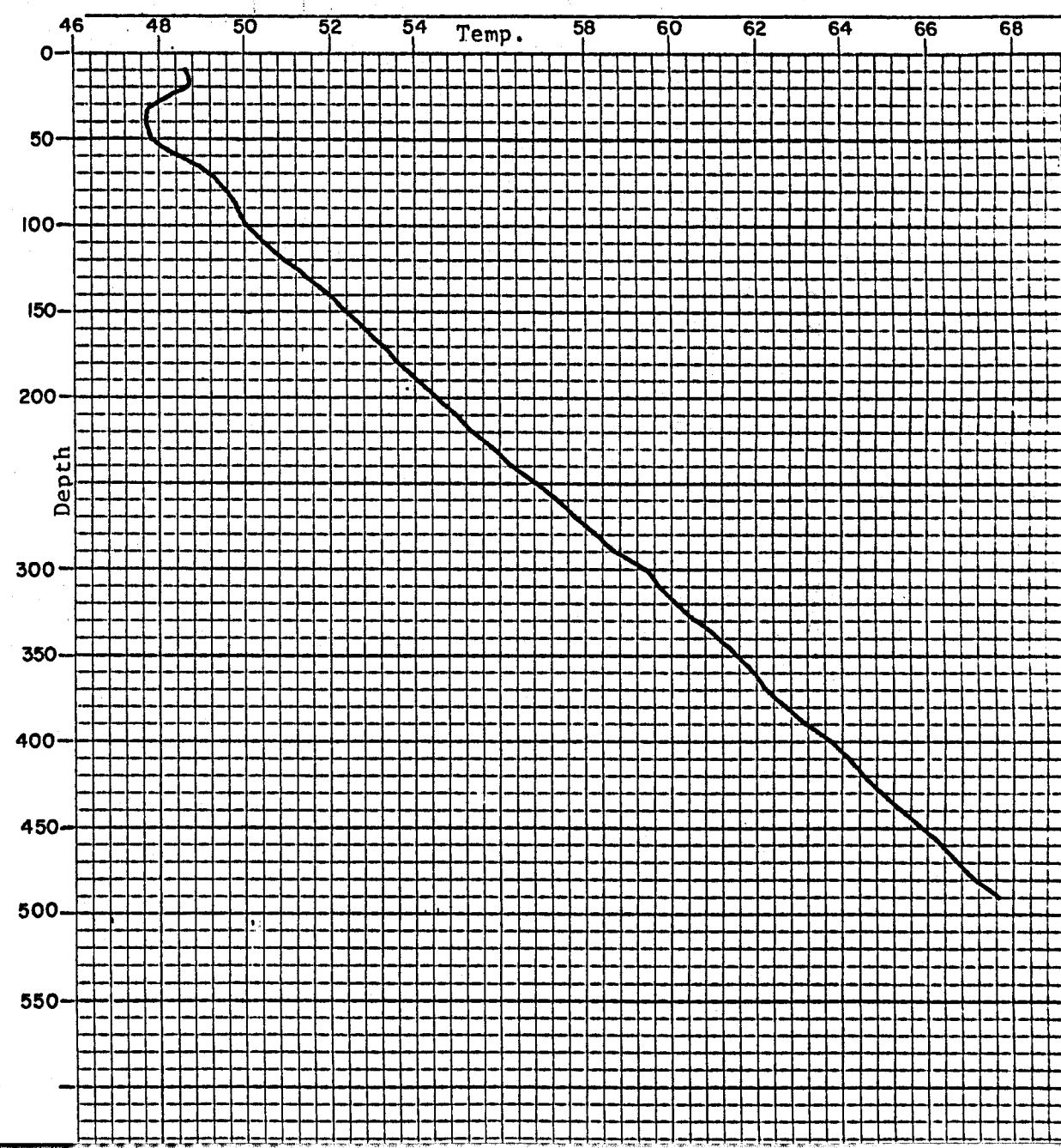


Prospect Lakeview Hole L-12 Location T37S-R18E NW SE SE 5 Grad. 4.5°F/100' from 100-490'

Probe Box Cable Comments Completed 8/2/79. Probed four days after completion.

Date 8/6/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.2	48.6	330	15.85	60.5			
20	9.3	48.7	340	16.15	61.1			
30	8.8	47.8	350	16.4	61.5			
40	8.7	47.7	360	16.6	61.9			
50	8.8	47.8	370	16.8	62.2			
60	9.1	48.4	380	17.05	62.7			
70	9.5	49.1	390	17.3	63.1			
80	9.7	49.5	400	17.6	63.7			
90	9.9	49.8	410	17.85	64.1			
100	10.0	50.0	420	18.0	64.4			
110	10.2	50.4	430	18.25	64.9			
120	10.5	50.9	440	18.5	65.3			
130	10.8	51.4	450	18.75	65.8			
140	11.05	51.9	460	19.05	66.3			
150	11.3	52.3	470	19.3	66.7			
160	11.55	52.8	480	19.5	67.1			
170	11.8	53.2	490	19.75	67.6			
180	12.0	53.6	495	19.85				
190	12.2	54.0						
200	12.5	54.5						
210	12.7	54.9						
220	12.95	55.3						
230	13.2	55.8						
240	13.45	56.2						
250	13.8	56.8						
260	14.05	57.3						
270	14.3	57.7						
280	14.55	58.2						
290	14.8	58.6						
300	15.15	59.3						
310	15.35	59.6						
320	15.6	60.1						



Prospect Lakeview Hole L-13

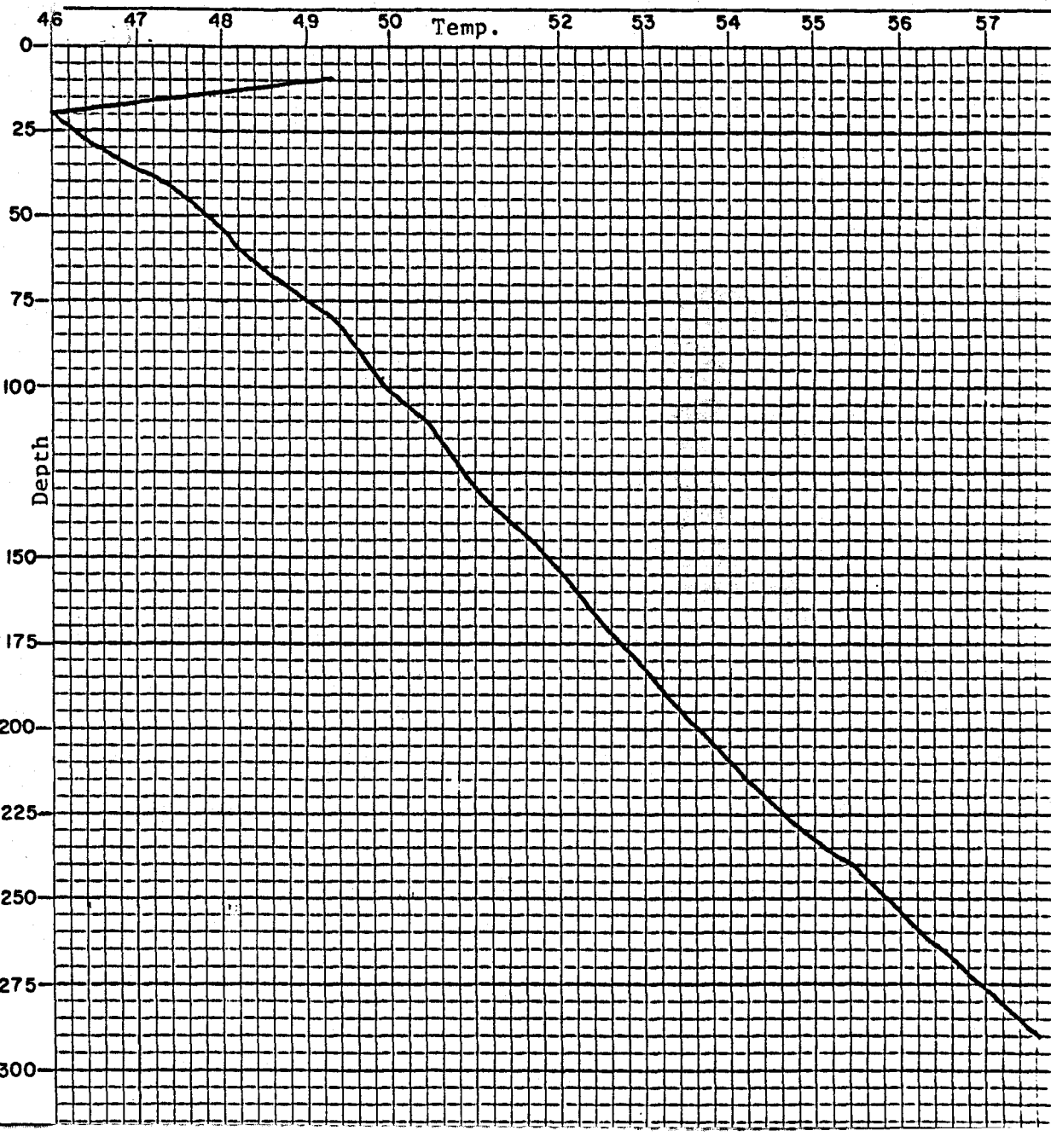
Location T36S-R18E NW SW NW 19 Grad. 4.4°F/100' from 190-290

Comments Completed on 8/7/79

Probe Box Cable

Date 8/15/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.8	49.3						
20	7.8	46.0						
30	8.05	46.5						
40	8.5	47.3						
50	8.8	47.8						
60	9.0	48.2						
70	9.3	48.7						
80	9.6	49.3						
90	9.8	49.6						
100	9.95	49.9						
110	10.2	50.4						
120	10.4	50.7						
130	10.55	51.0						
140	10.8	51.4						
150	11.0	51.8						
160	11.25	52.2						
170	11.4	52.5						
180	11.6	52.9						
190	11.8	53.2						
200	12.0	53.6						
210	12.2	54.0						
220	12.45	54.4						
230	12.65	54.8						
240	13.0	55.4						
250	13.25	55.85						
260	13.45	56.2						
270	13.7	56.7						
280	13.95	57.1						
290	14.2	57.6						

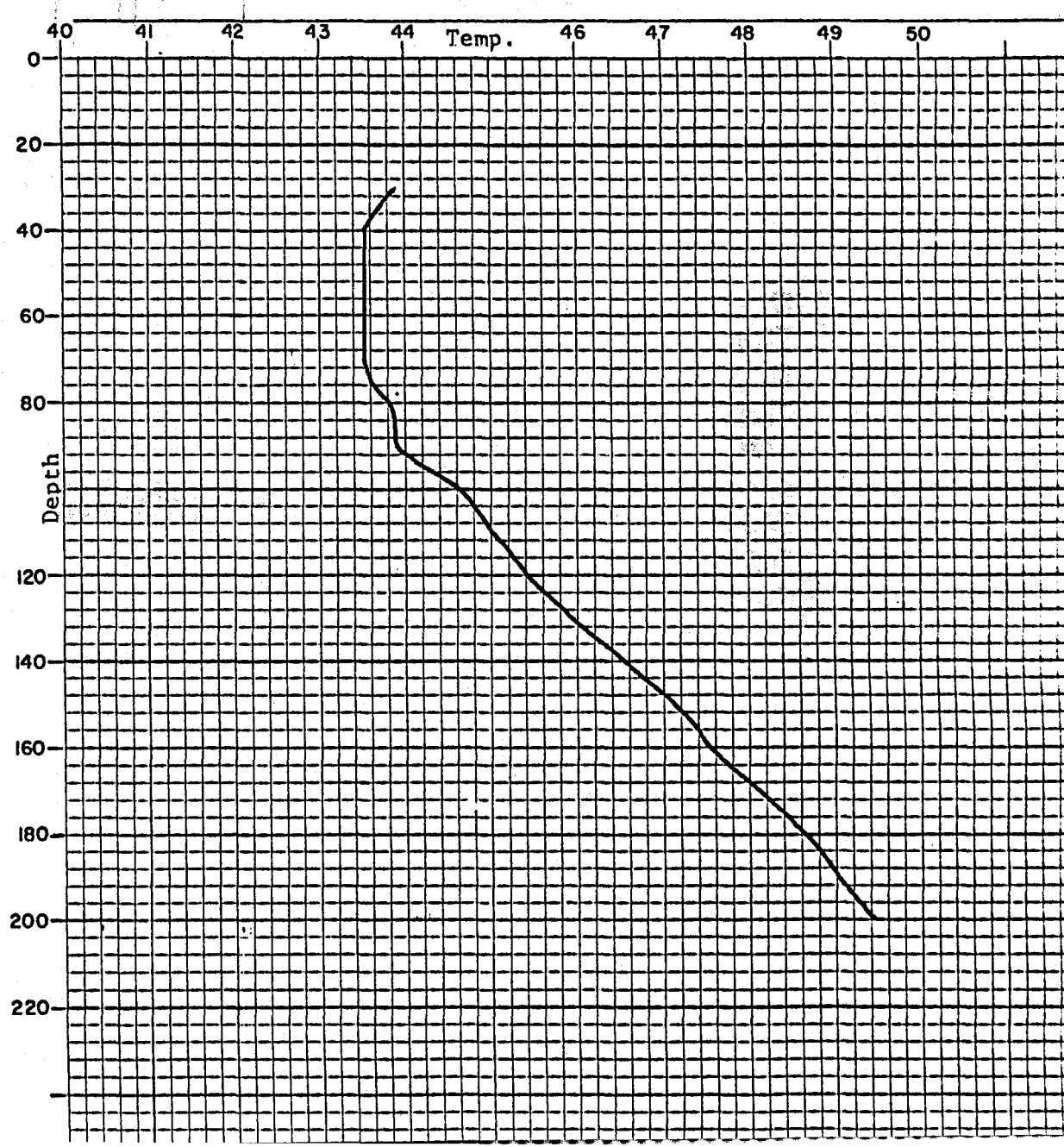


Prospect Lakeview Hole L-14 Location T37S-R17E NE NE 11 Grad. 4.8 from 100-200

Probe Box Cable Comments Completed 8/8/79

Date 8/15/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
30	6.6	43.9						
40	6.45	43.5						
50	6.4	43.5						
60	6.4	43.5						
70	6.4	43.5						
80	6.55	43.8						
90	6.6	43.9						
100	7.0	44.6						
110	7.2	45.0						
120	7.45	45.4						
130	7.75	45.95						
140	8.05	46.5						
150	8.4	47.1						
160	8.62	47.5						
170	8.95	48.1						
180	9.2	48.6						
190	9.45	49.0						
200	9.65	49.4						



Prospect Lakeview Hole L-15

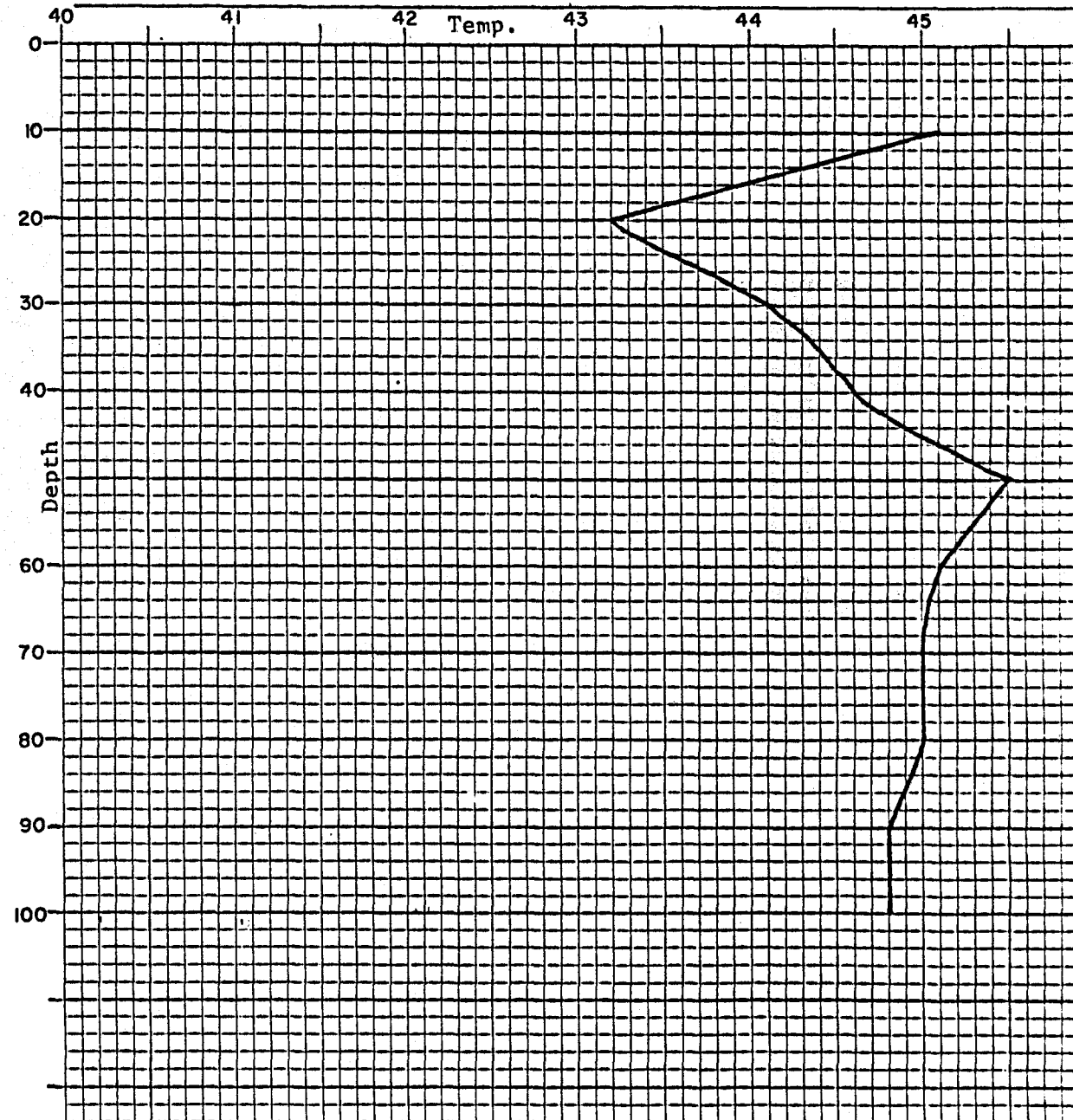
Probe Box Cable

Location T37S-R18E NW NE 2 Grad. isothermal

Comments Lithologic log on back. Probed 3-4 days after completion.

Date 8/6/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	7.3	45.1						
20	6.25	43.2						
30	6.75	44.1						
40	7.0	44.6						
50	7.5	45.5						
60	7.3	45.1						
70	7.25	45.0						
80	7.25	45.0						
90	7.1	44.8						
100	7.1	44.8						



Prospect Lakeview Hole L-16

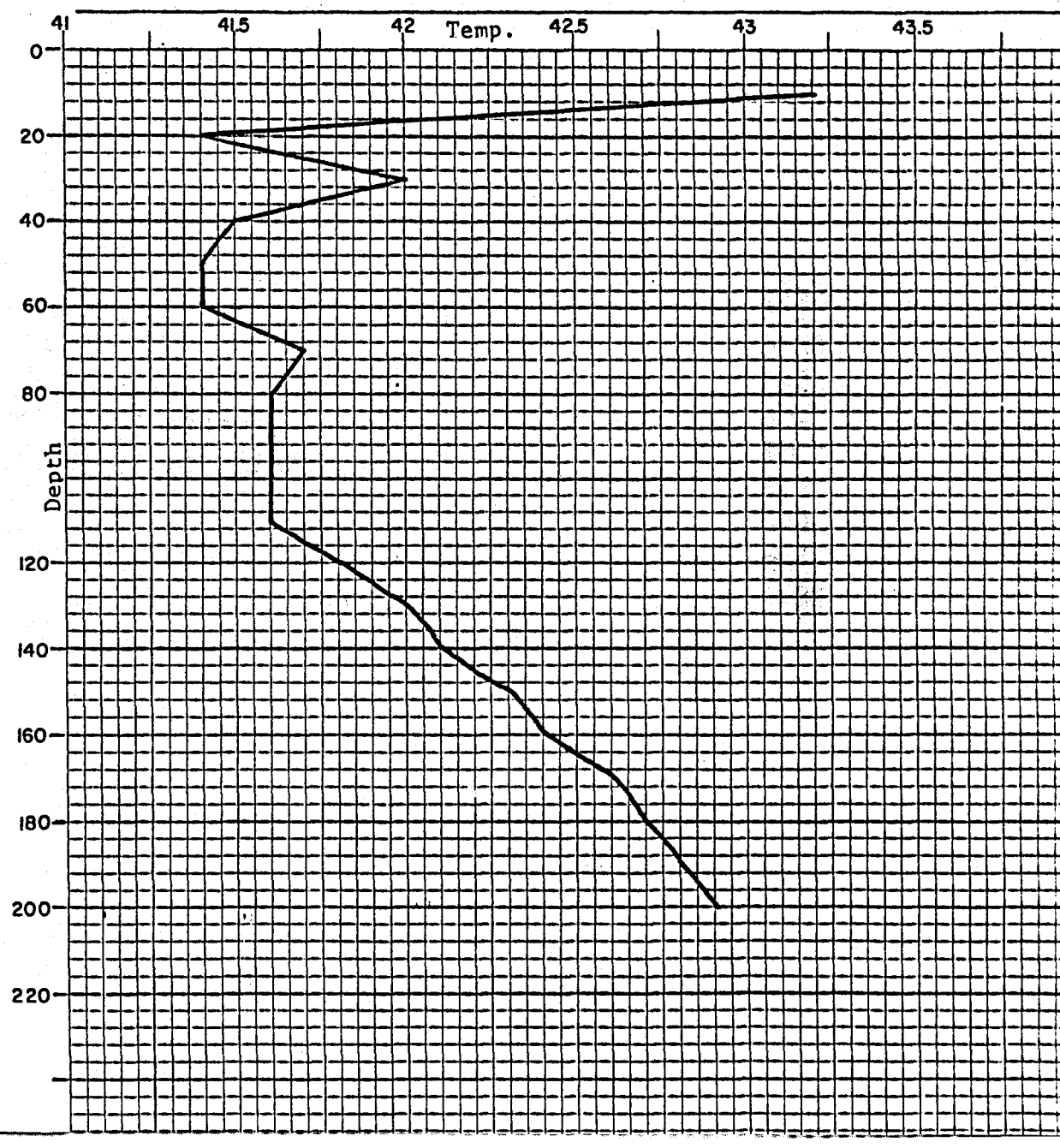
Location T37S-R19E NW SW 7 Grad. 1.3°F/100' from 130-200'

Comments Probed about three days after completion and logged and abandoned 8/13/79.

Probe Box Cable

Date 8/6/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.25	43.2						
20	5.2	41.4						
30	5.55	42.0						
40	5.3	41.5						
50	5.2	41.4						
60	5.2	41.4						
70	5.4	41.7						
80	5.35	41.6						
90	5.35	41.6						
100	5.35	41.6						
110	5.35	41.6						
120	5.45	41.8						
130	5.55	42.0						
140	5.6	42.1						
150	5.7	42.3						
160	5.8	42.4						
170	5.9	42.6						
180	5.95	42.7						
190	6.0	42.8						
200	6.05	42.9						

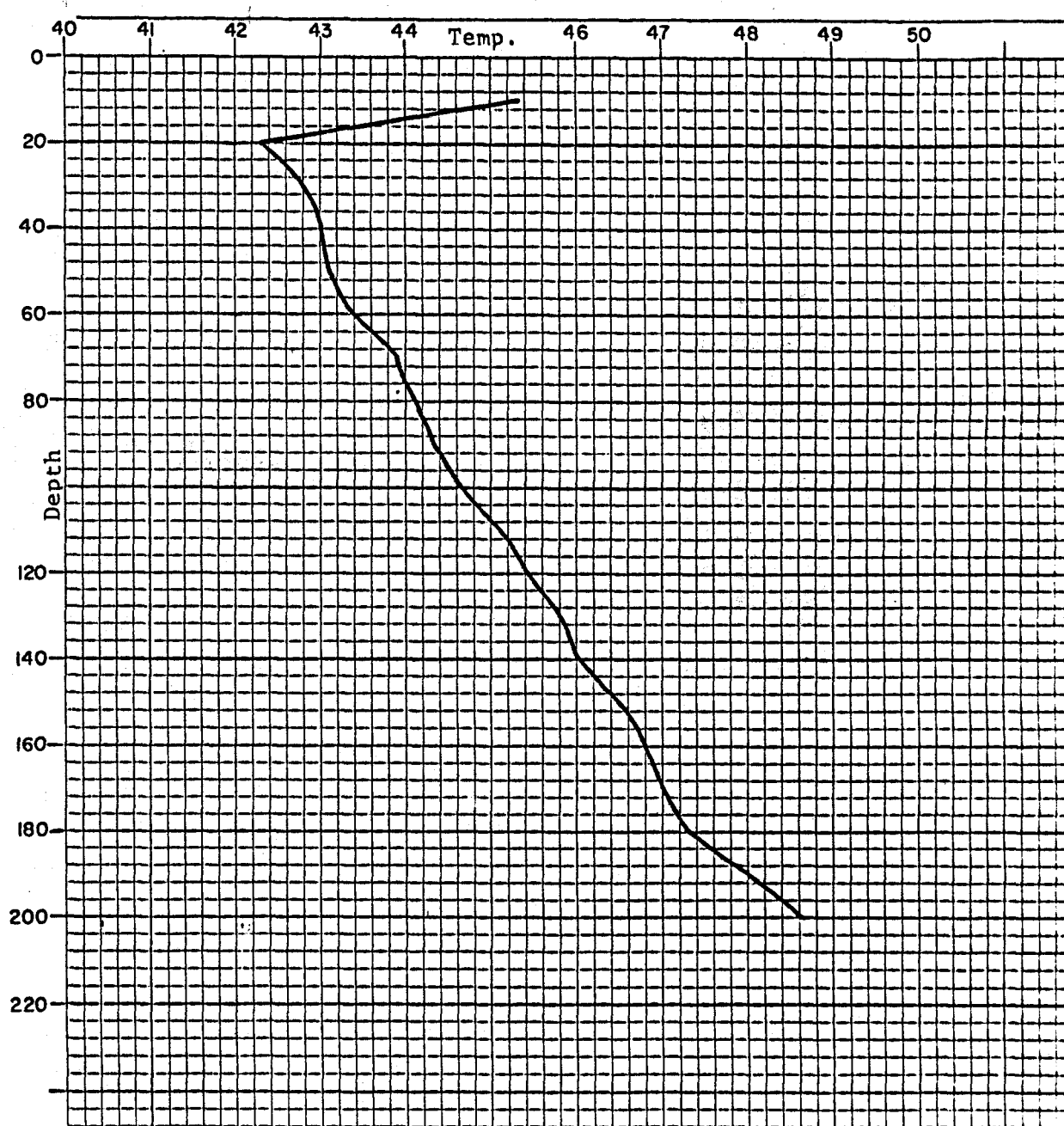


Prospect Lakeview Hole L-17 Location T37S-R19E NW NW SE 18 Grad. 6.5°F/100' from 180-200

Probe Box Cable Comments Probed five days after completion and logged and abandoned 8/13/79.

Date 8/7/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	7.4	45.32						
20	5.7	42.3						
30	6.0	42.8						
40	6.1	43.0						
50	6.15	43.1						
60	6.35	43.4						
70	6.6	43.9						
80	6.7	44.1						
90	6.85	44.3						
100	7.0	44.6						
110	7.3	45.1						
120	7.45	45.4						
130	7.65	45.8						
140	7.8	46.0						
150	8.05	46.5						
160	8.2	46.8						
170	8.35	47.0						
180	8.5	47.3						
190	8.9	48.0						
200	9.2	48.6						

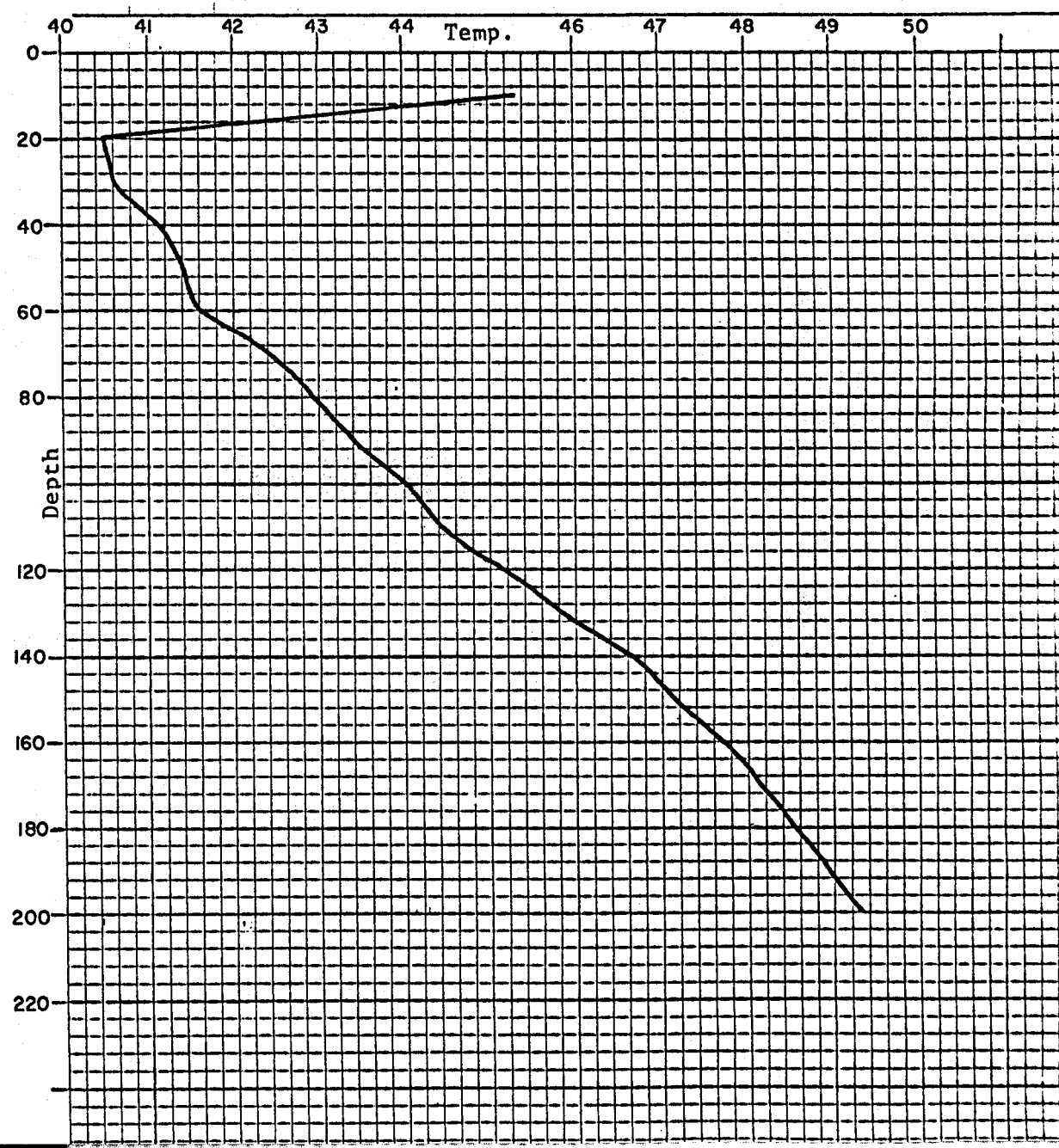


Prospect Lakeview Hole L-18 Location T36S-R18E SW SW SW 23 Grad. 4.0°F/100' from 160-200

Probe Box Cable Comments Probed three days after completion

Date 8/7/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	7.4	45.3						
20	4.75	40.5						
30	4.8	40.6						
40	5.05	41.1						
50	5.2	41.4						
60	5.35	41.6						
70	5.75	42.4						
80	6.05	42.9						
90	6.35	43.4						
100	6.65	44.0						
110	6.9	44.4						
120	7.3	45.1						
130	7.65	45.8						
140	8.1	46.6						
150	8.4	47.1						
160	8.7	47.7						
170	8.95	48.1						
180	9.15	48.5						
190	9.4	48.9						
200	9.6	49.3						



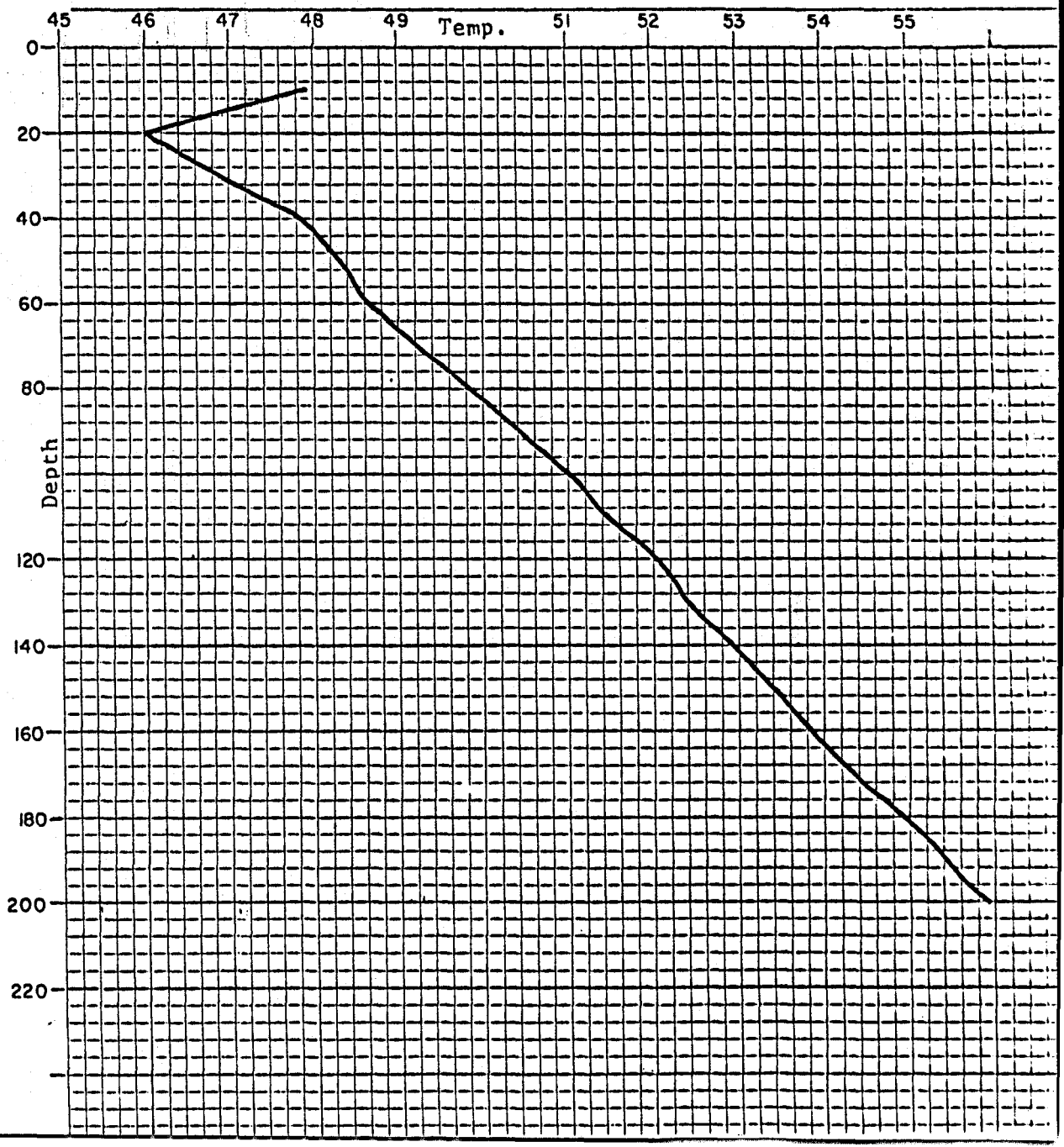
Prospect Lakeview Hole L-19 Location T36S-R17E SE NW SE 36 Grad. 4.9°F/100' from 100-200'

Probe Box Cable Comments Completed 8/4/79. Probed about three days after completion.

Date Time Opr

8/7/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	8.85	47.9						
20	7.8	46.0						
30	8.3	46.9						
40	8.8	47.8						
50	9.05	48.3						
60	9.2	48.6						
70	9.55	49.2						
80	9.9	49.8						
90	10.2	50.4						
100	10.55	51.0						
110	10.8	51.4						
120	11.1	52.0						
130	11.35	52.4						
140	11.6	52.9						
150	11.9	53.4						
160	12.1	53.8						
170	12.4	54.3						
180	12.7	54.9						
190	13.0	55.4						
200	13.3	55.9						

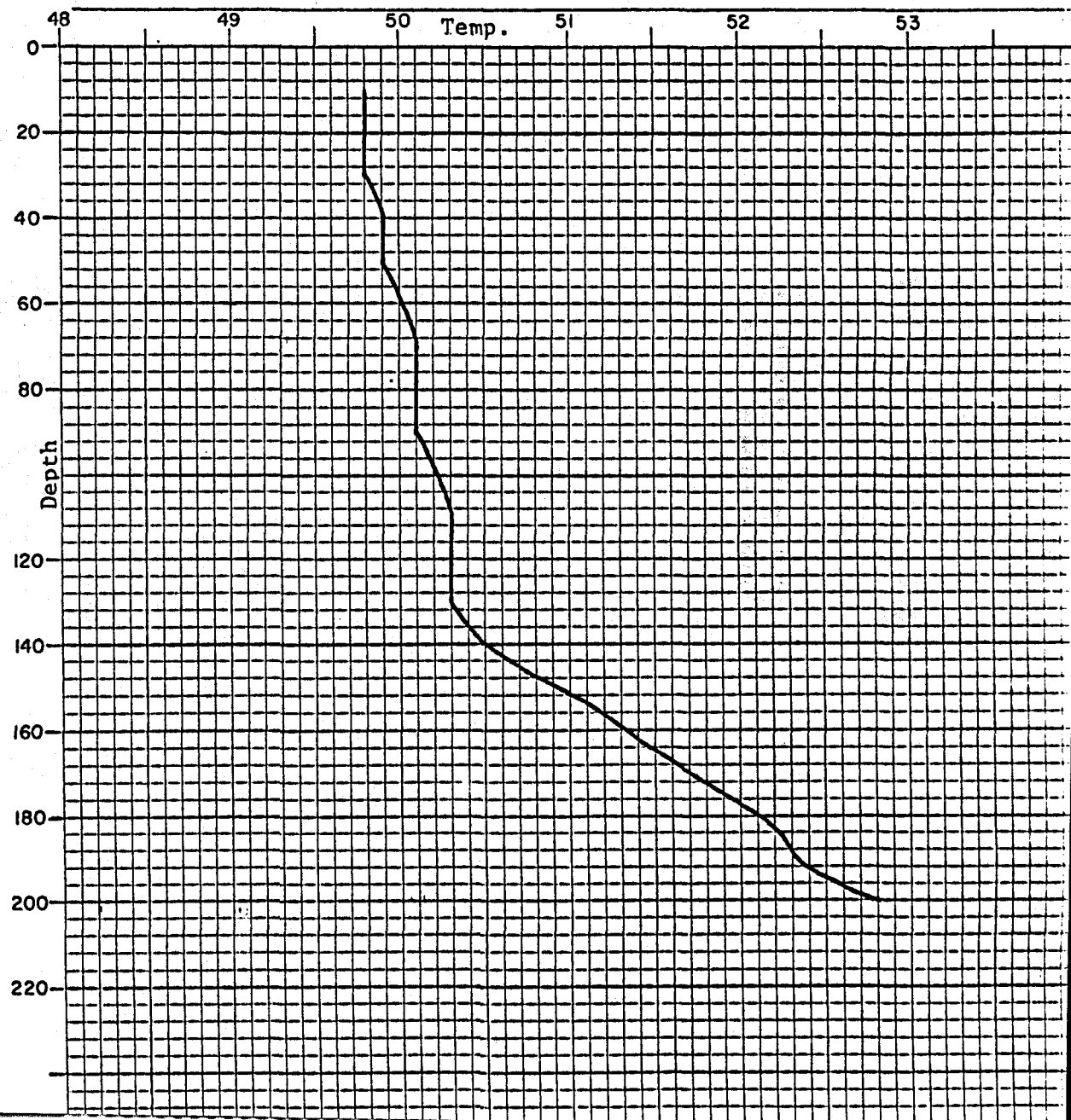


Prospect Lakeview Hole L-20 Location T37S-R18E NE NE NW 20 Grad. 3.8°F/100' from 150-200

Probe Box Cable Comments Artesian hole flowing 5-7 gpm of 9.9°C water

Date 8/8/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.9	49.8						
20	9.9	49.8						
30	9.9	49.8						
40	9.95	49.9						
50	9.95	49.9						
60	10.0	50.0						
70	10.05	50.1						
80	10.05	50.1						
90	10.05	50.1						
100	10.1	50.2						
110	10.15	50.3						
120	10.15	50.3						
130	10.15	50.3						
140	10.3	50.5						
150	10.5	50.9						
160	10.7	51.3						
170	10.95	51.7						
180	11.15	52.1						
190	11.3	52.3						
200	11.55	52.8						

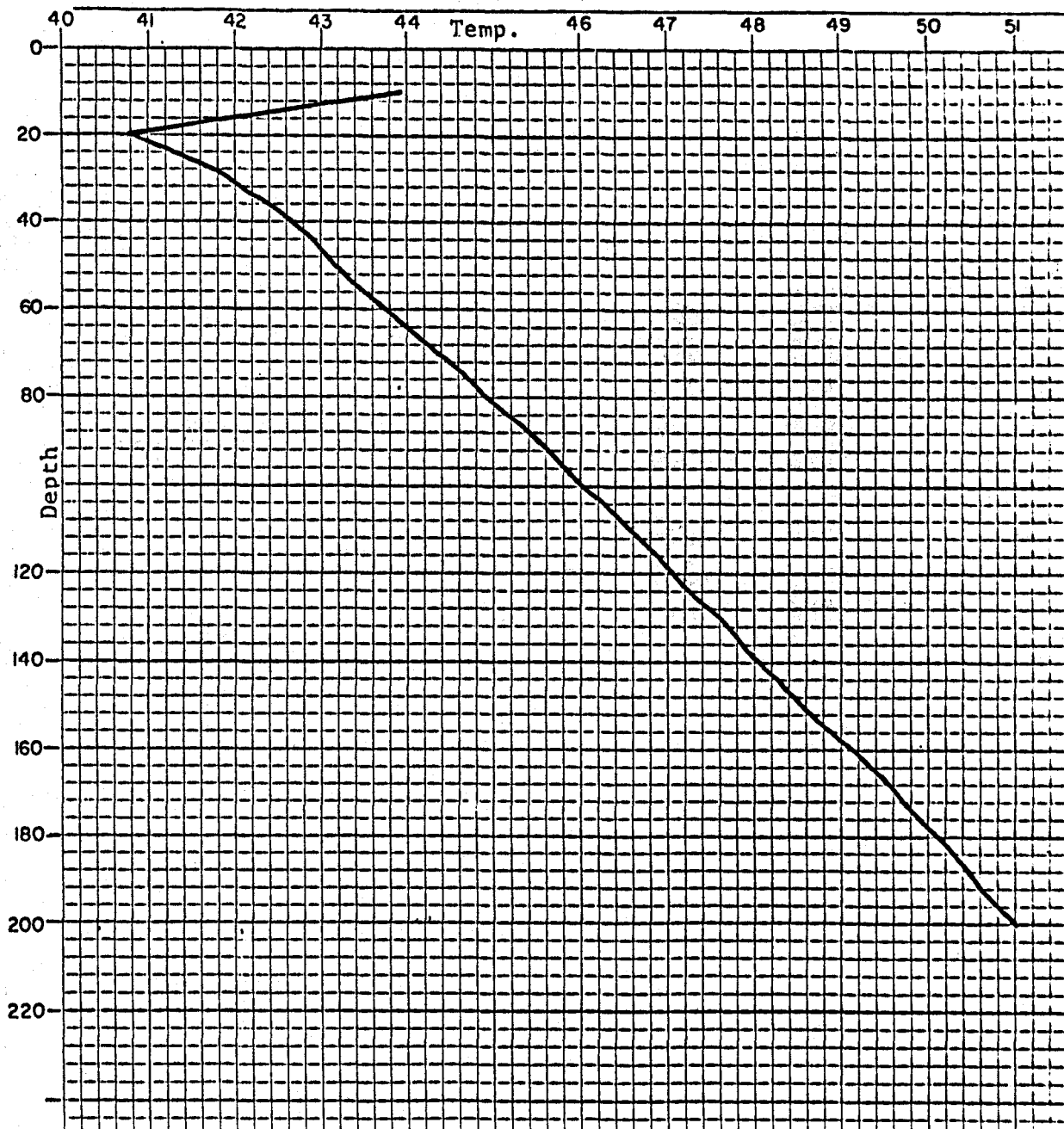


Prospect Lakeview Hole L-21 Location T37S-R17E SW SE 25 Grad. 5.0°F/100' from 100-200'

Probe Box Cable Comments Completed 8/4/79

Date 8/7/79

Time	Opr	Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.6	43.9								
20	4.9	40.8								
30	5.5	41.9								
40	5.9	42.6								
50	6.15	43.1								
60	6.5	43.7								
70	6.85	44.3								
80	7.15	44.9								
90	7.5	45.5								
100	7.75	46.0								
110	8.05	46.5								
120	8.35	47.0								
130	8.65	47.6								
140	8.9	48.0								
150	9.15	48.5								
160	9.5	49.1								
170	9.8	49.6								
180	10.05	50.1								
190	10.3	50.5								
200	10.55	51.0								



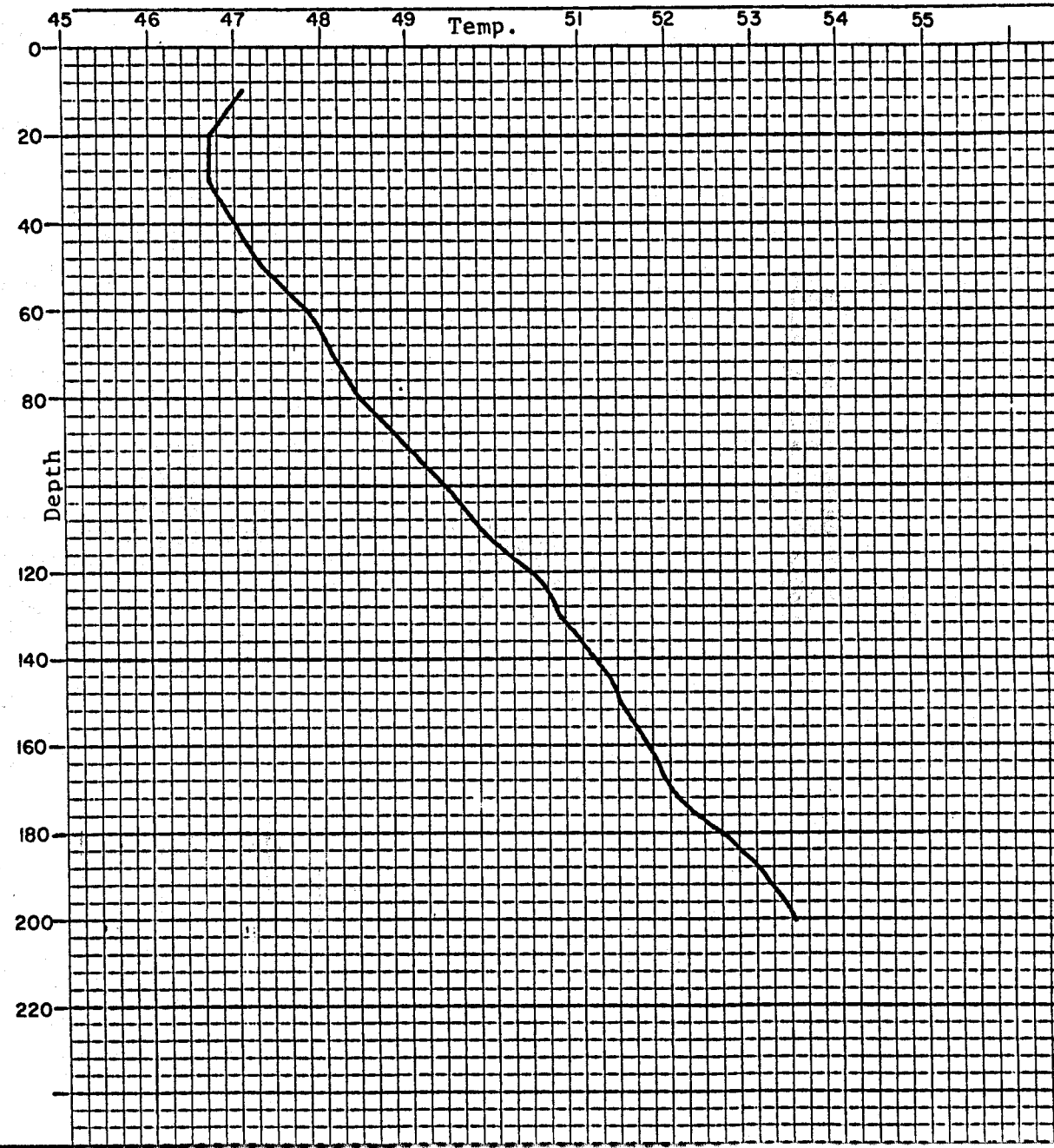
Prospect Lakeview Hole L-22 Location T37S-R18E NW SE 15 Grad. 4.0°F/100'

Probe Box Cable

Comments Completed 8/5/79. Probed three days after completion.
Abandoned and logged 8/13/79

Date 8/8/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	8.4	47.1						
20	8.15	46.7						
30	8.15	46.7						
40	8.35	47.0						
50	8.5	47.3						
60	8.75	47.8						
70	8.95	48.1						
80	9.1	48.4						
90	9.4	48.9						
100	9.65	49.4						
110	9.9	49.8						
120	10.2	50.4						
130	10.4	50.7						
140	10.6	51.1						
150	10.8	51.4						
160	10.95	51.7						
170	11.1	52.0						
180	11.45	52.6						
190	11.7	53.1						
200	11.9	53.4						



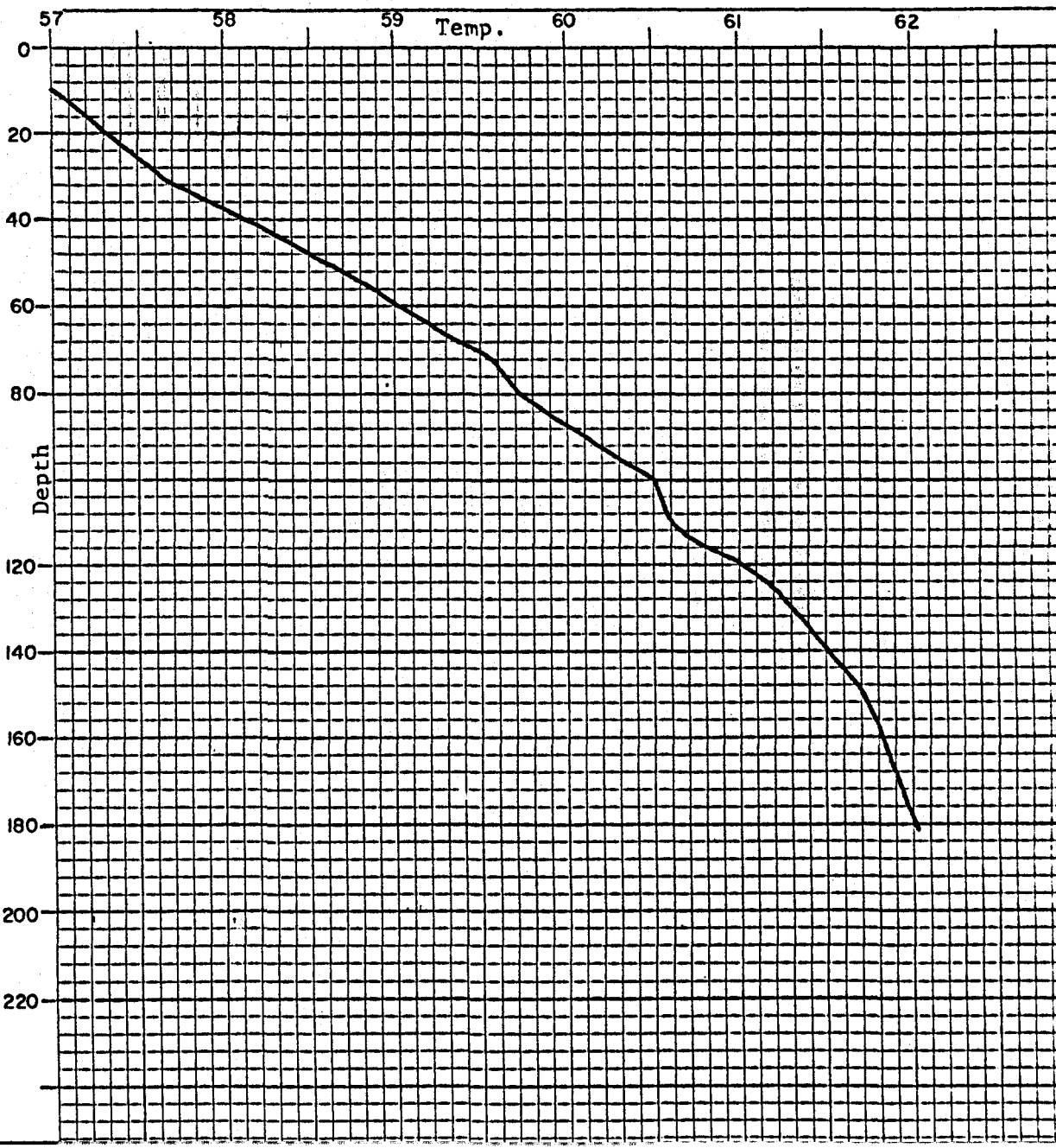
Prospect Lakeview Hole L-23 Location T36S-R18E SW SW SW 28 Grad. 1.0°F/100' from 150-180

Probe Box Cable

Comments Completed 8/5/79. On 8/8/79 the hole is leaking about 1-2 gpm of 14.0°C water. Drilled to 200' and completed to 180 feet.

Date Time Opr
8/8/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	13.9	57.0						
20	14.05	57.3						
30	14.25	57.6						
40	14.5	58.1						
50	14.8	58.6						
60	15.0	59.0						
70	15.3	59.5						
80	15.4	59.7						
90	15.6	60.1						
100	15.85	60.5						
110	15.9	60.6						
120	16.1	61.0						
130	16.25	61.3						
140	16.4	61.5						
150	16.5	61.7						
160	16.55	61.8						
170	16.6	61.9						
180	16.65	62.0						



Prospect Lakeview Hole L-24 Location T37S-R18E SE SW 29 Grad. 4.8°F/100'

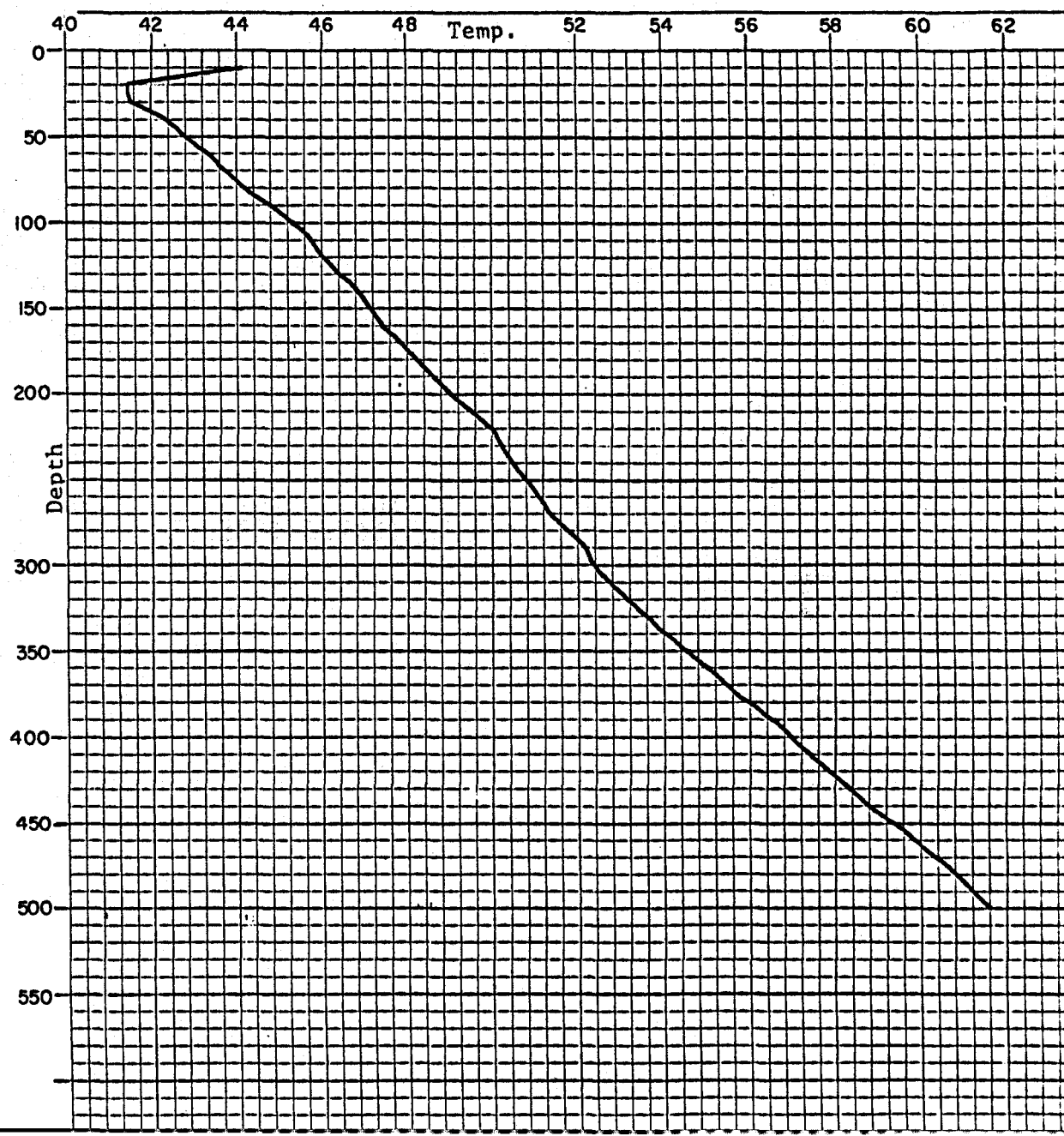
Probe Box Cable

Comments Completed 8/7/79. Probed seven days after completion

Date Time Opr

8/14/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.7	44.1	320	11.7	53.1			
20	5.2	41.4	330	11.95	53.5			
30	5.3	41.5	340	12.2	54.0			
40	5.7	42.3	350	12.5	54.5			
50	5.95	42.7	360	12.8	55.0			
60	6.3	43.3	370	13.05	55.5			
70	6.5	43.7	380	13.35	56.0			
80	6.8	44.2	390	13.6	56.5			
90	7.1	44.8	400	13.85	56.9			
100	7.4	45.3	410	14.1	57.4			
110	7.6	45.7	420	14.35	57.8			
120	7.75	45.95	430	14.6	58.3			
130	8.0	46.4	440	14.9	58.8			
140	8.2	46.8	450	15.2	59.4			
150	8.4	47.1	460	15.45	59.8			
160	8.55	47.4	470	15.8	60.4			
170	8.8	47.8	480	16.0	60.8			
180	9.0	48.2	490	16.15	61.1			
190	9.25	48.65	500	16.45	61.5			
200	9.4	48.9						
210	9.75	49.55						
220	9.95	49.9						
230	10.1	50.2						
240	10.2	50.4						
250	10.4	50.7						
260	10.6	51.1						
270	10.75	51.35						
280	10.95	51.7						
290	11.15	52.1						
300	11.3	52.3						
310	11.5	52.7						



Prospect Lakeview Hole L-25

Location T38S-R18E NW SE 9 Grad. 3.7°F/100'

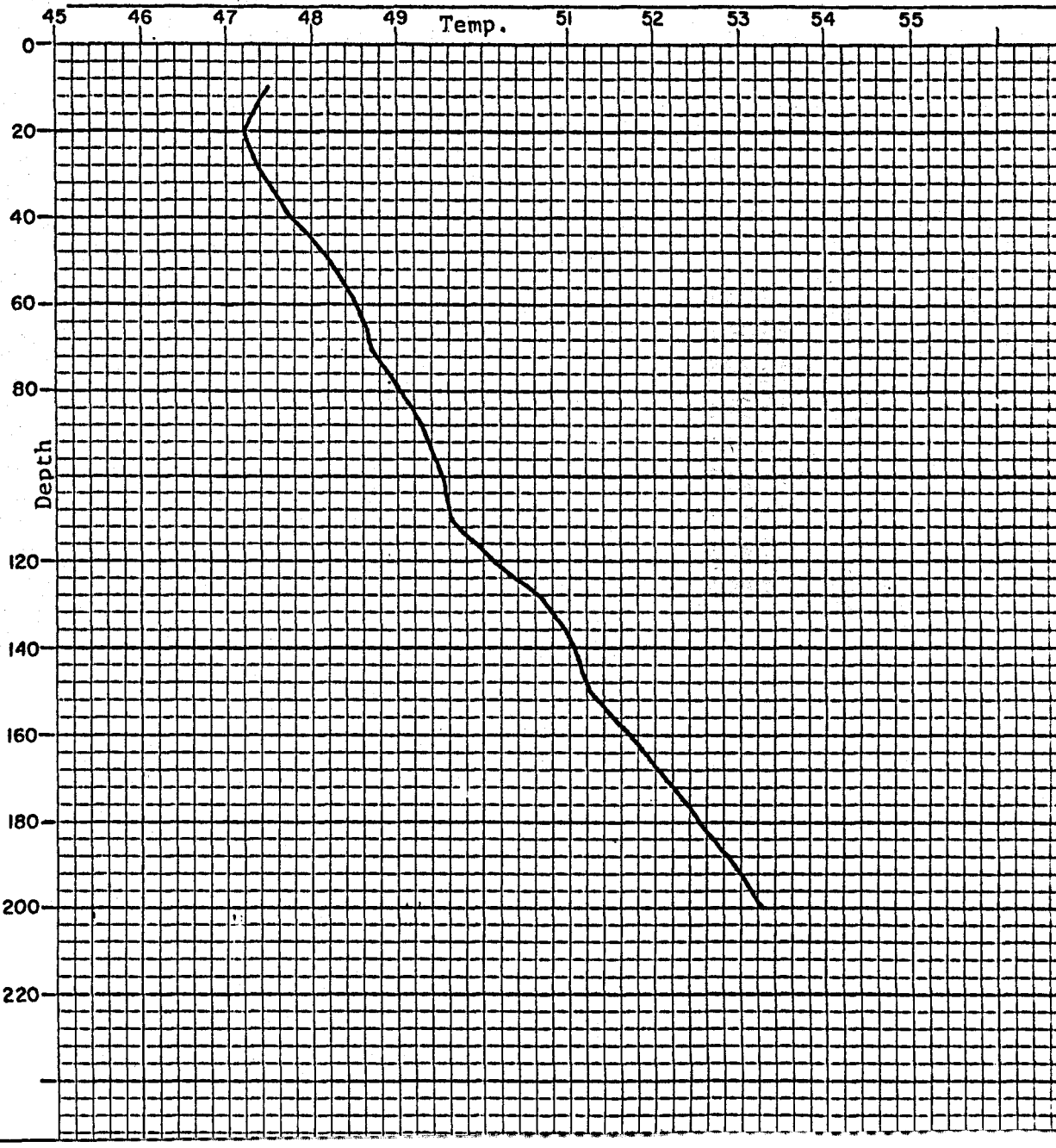
Probe Box Cable

Comments Completed on 8/8/79

Date Time Opr

8/14/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	8.6	47.5						
20	8.45	47.2						
30	8.55	47.4						
40	8.75	47.75						
50	9.0	48.2						
60	9.15	48.5						
70	9.3	48.7						
80	9.45	49.0						
90	9.6	49.3						
100	9.75	49.55						
110	9.8	49.6						
120	10.05	50.1						
130	10.4	50.7						
140	10.55	51.0						
150	10.65	51.2						
160	10.95	51.7						
170	11.15	52.1						
180	11.4	52.5						
190	11.6	52.9						
200	11.8	53.2						

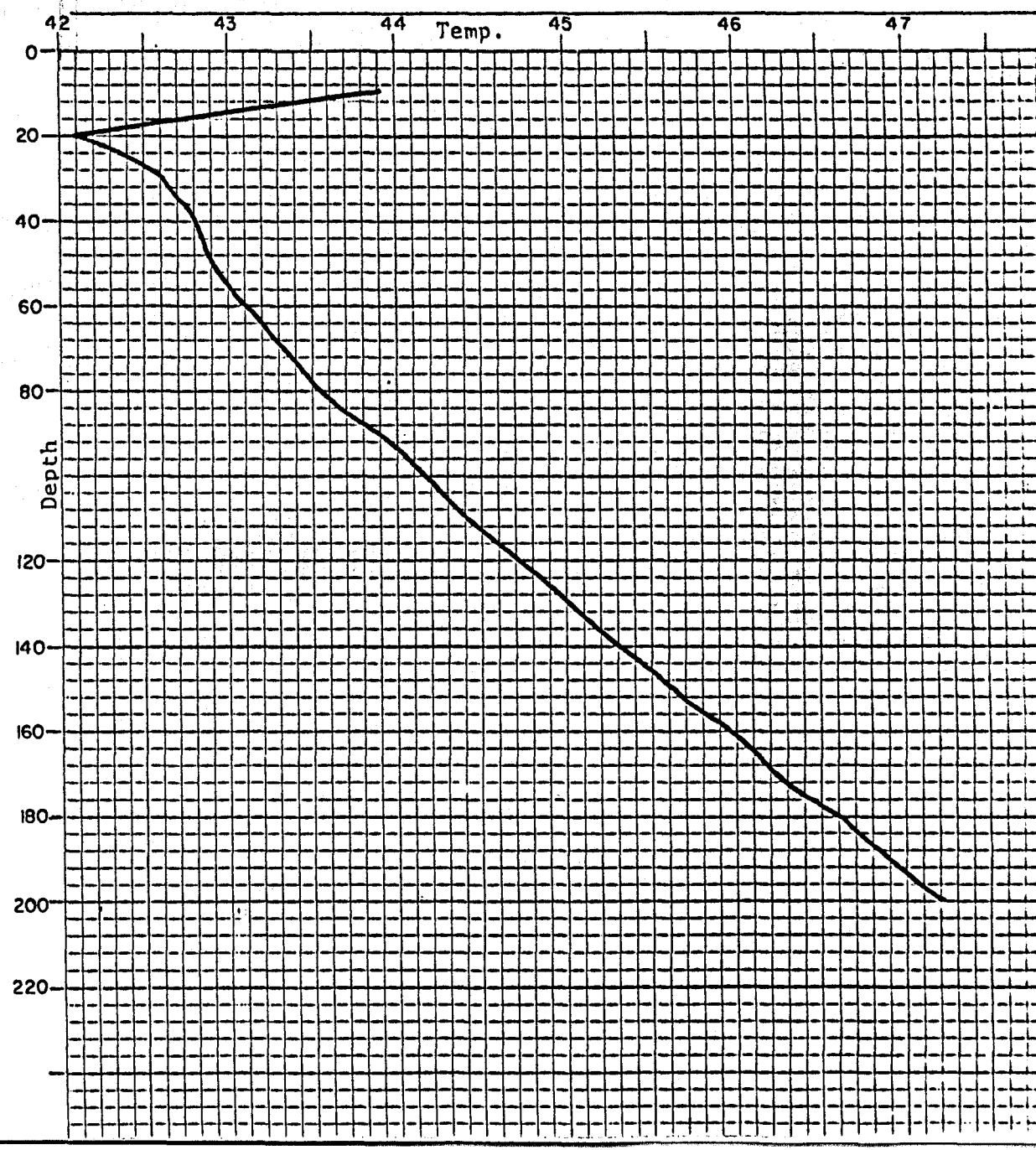


Prospect Lakeview Hole L-26 Location T38S-R18E SE NW 18 Grad. 3.0°F/100'

Probe Box Cable Comments

Date 8/14/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.6	43.9						
20	5.6	42.1						
30	5.9	42.6						
40	6.0	42.8						
50	6.05	42.9						
60	6.15	43.1						
70	6.3	43.3						
80	6.4	43.5						
90	6.6	43.9						
100	6.75	44.15						
110	6.9	44.4						
120	7.05	44.7						
130	7.2	45.0						
140	7.4	45.3						
150	7.55	45.6						
160	7.75	45.95						
170	7.9	46.2						
180	8.1	46.6						
190	8.25	46.85						
200	8.45	47.2						

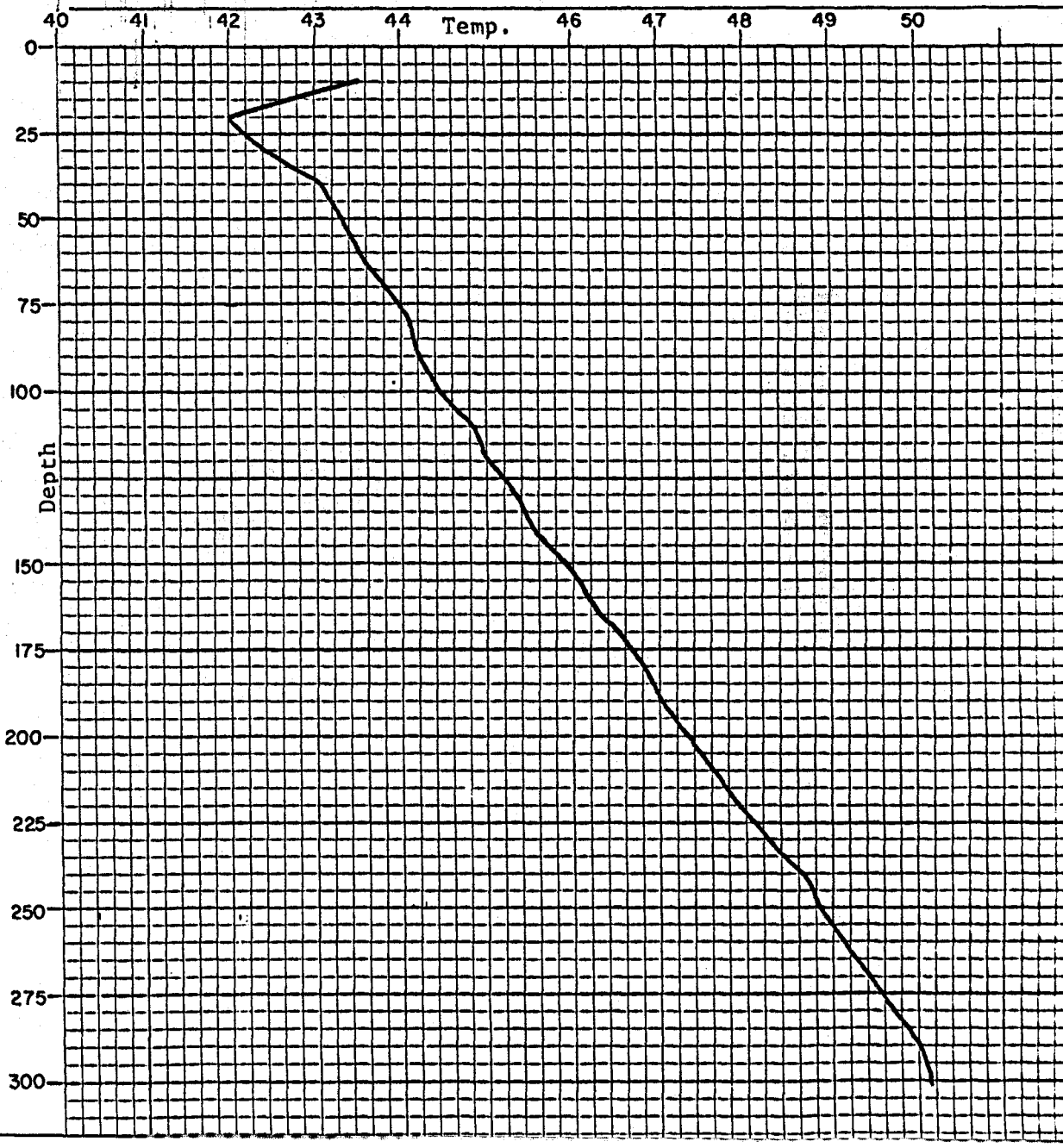


Prospect Lakeview Hole L-27 Location T37S-R17E SE SW 29 Grad2.9°F/100' from 90-290

Probe Box Cable Comments Completed 8/9/79

Date Time Opr
8/14/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.4	43.5						
20	5.55	42.0						
30	5.8	42.4						
40	6.1	43.0						
50	6.3	43.3						
60	6.4	43.5						
70	6.55	43.8						
80	6.7	44.1						
90	6.8	44.2						
100	6.92	44.45						
110	7.1	44.8						
120	7.25	45.0						
130	7.4	45.3						
140	7.55	45.6						
150	7.7	45.9						
160	7.9	46.2						
170	8.05	46.5						
180	8.2	46.8						
190	8.35	47.0						
200	8.5	47.3						
210	8.65	47.6						
220	8.85	47.9						
230	9.0	48.2						
240	9.2	48.6						
250	9.35	48.8						
260	9.5	49.1						
270	9.65	49.4						
280	9.85	49.7						
290	10.0	50.0						
300	10.05	50.1						

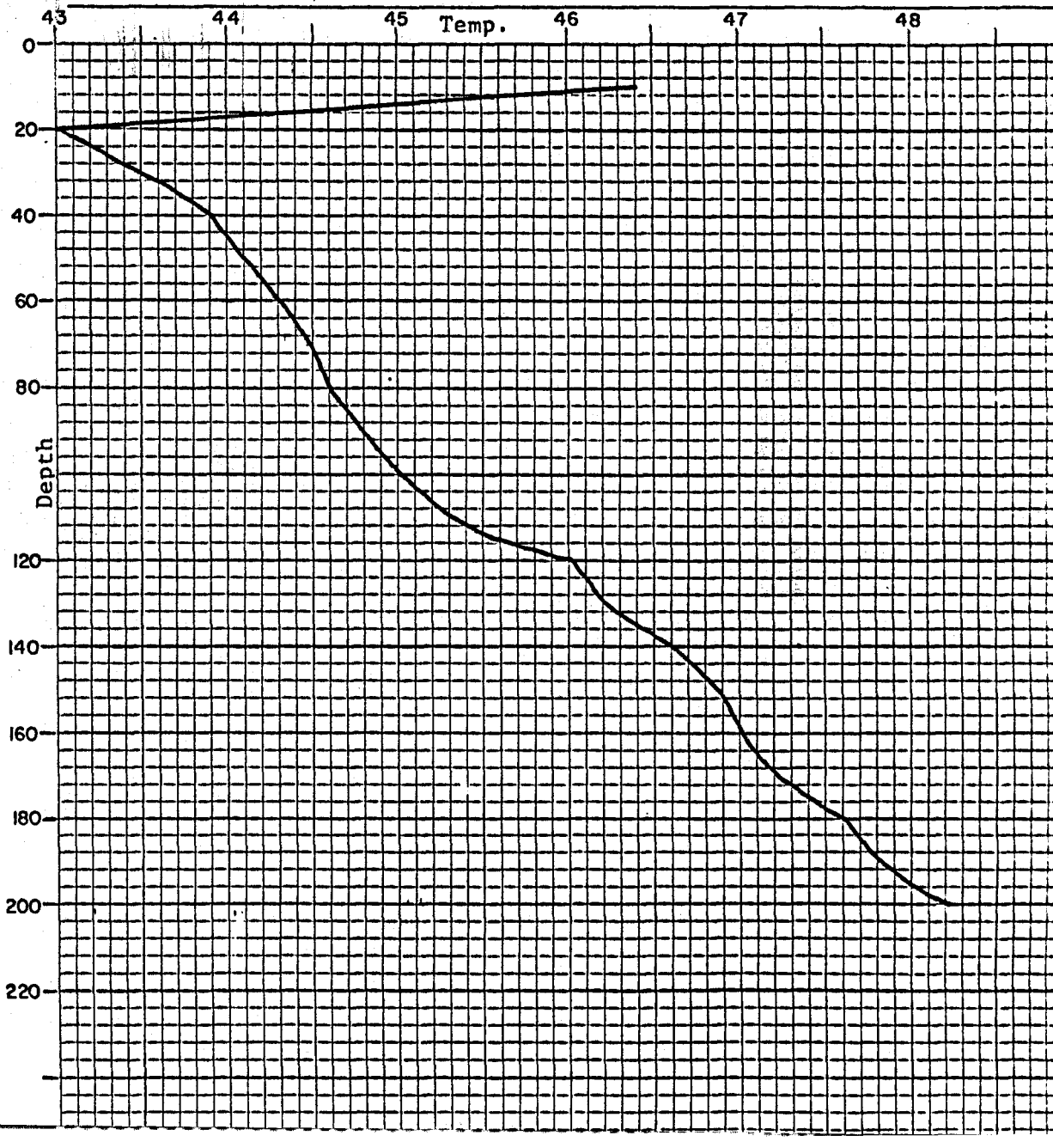


Prospect Lakeview Hole L-28 Location T37S-R17E NW SE 34 Grad. 2.8°F/100'

Probe Box Cable Comments Completed 8/9/79

Date 8/14/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	8.0	46.4						
20	6.1	43.0						
30	6.4	43.5						
40	6.6	43.9						
50	6.7	44.1						
60	6.85	44.3						
70	6.95	44.5						
80	7.0	44.6						
90	7.05	44.7						
100	7.2	45.0						
110	7.4	45.3						
120	7.8	46.0						
130	7.9	46.2						
140	8.1	46.6						
150	8.25	46.85						
160	8.35	47.0						
170	8.45	47.2						
180	8.65	47.6						
190	8.8	47.8						
200	9.0	48.2						



Prospect Lakeview Hole L-29 Location T37S-R18E SE NE 27 Grad. 9.6°F/100'

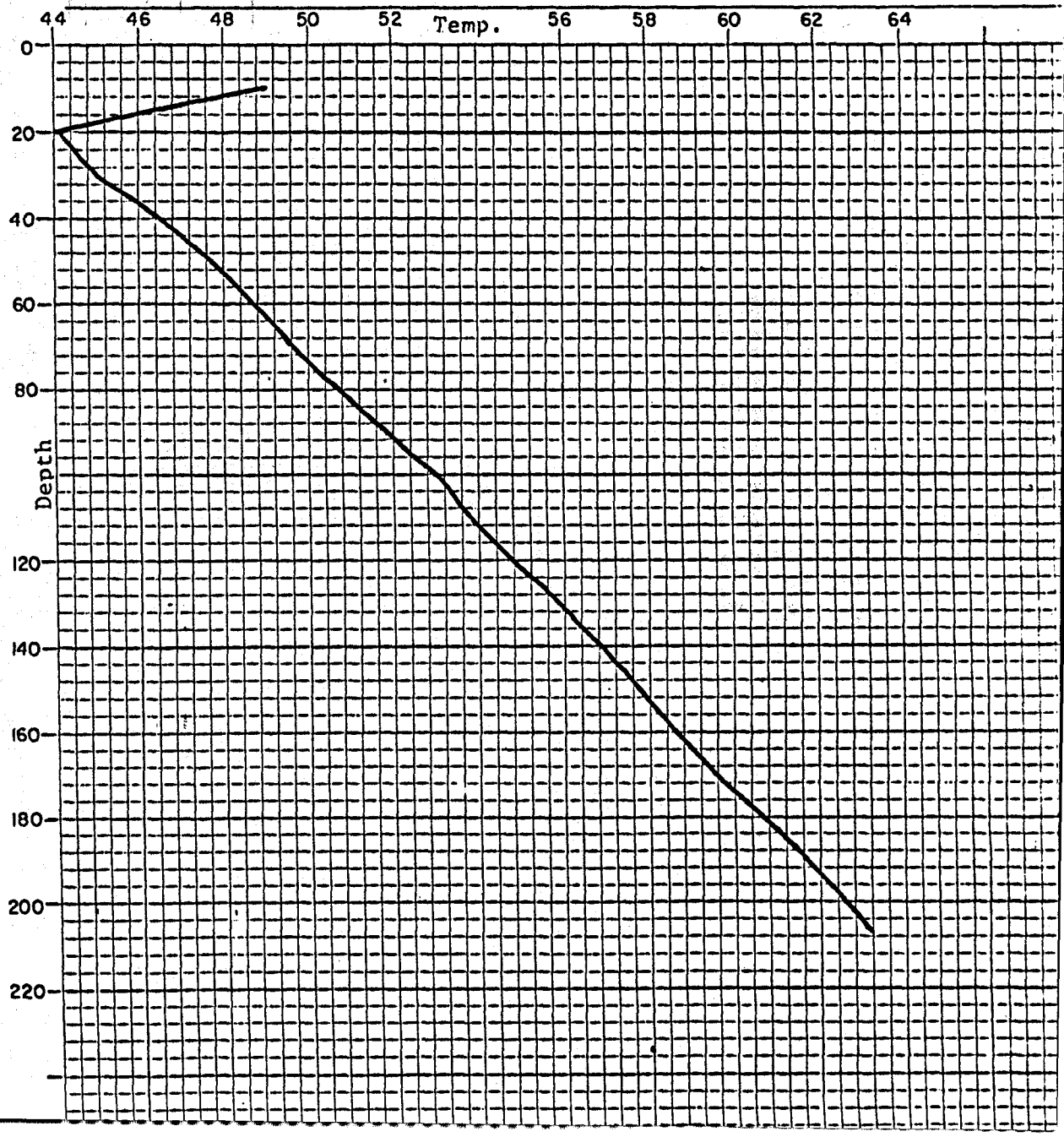
Probe Box Cable

Comments Probed eight days after completion

Date Time Opr

10/15/79

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	9.4	48.9						
20	6.7	44.1						
30	7.2	45.0						
40	8.0	46.4						
50	8.7	47.7						
60	9.25	48.65						
70	9.75	49.55						
80	10.4	50.7						
90	11.0	51.8						
100	11.6	52.9						
110	12.05	53.7						
120	12.6	54.7						
130	13.25	55.85						
140	13.8	56.8						
150	14.3	57.7						
160	14.8	58.6						
170	15.3	59.5						
180	15.9	60.6						
190	16.45	61.6						
200	16.95	62.5						
206	17.25	63.05						

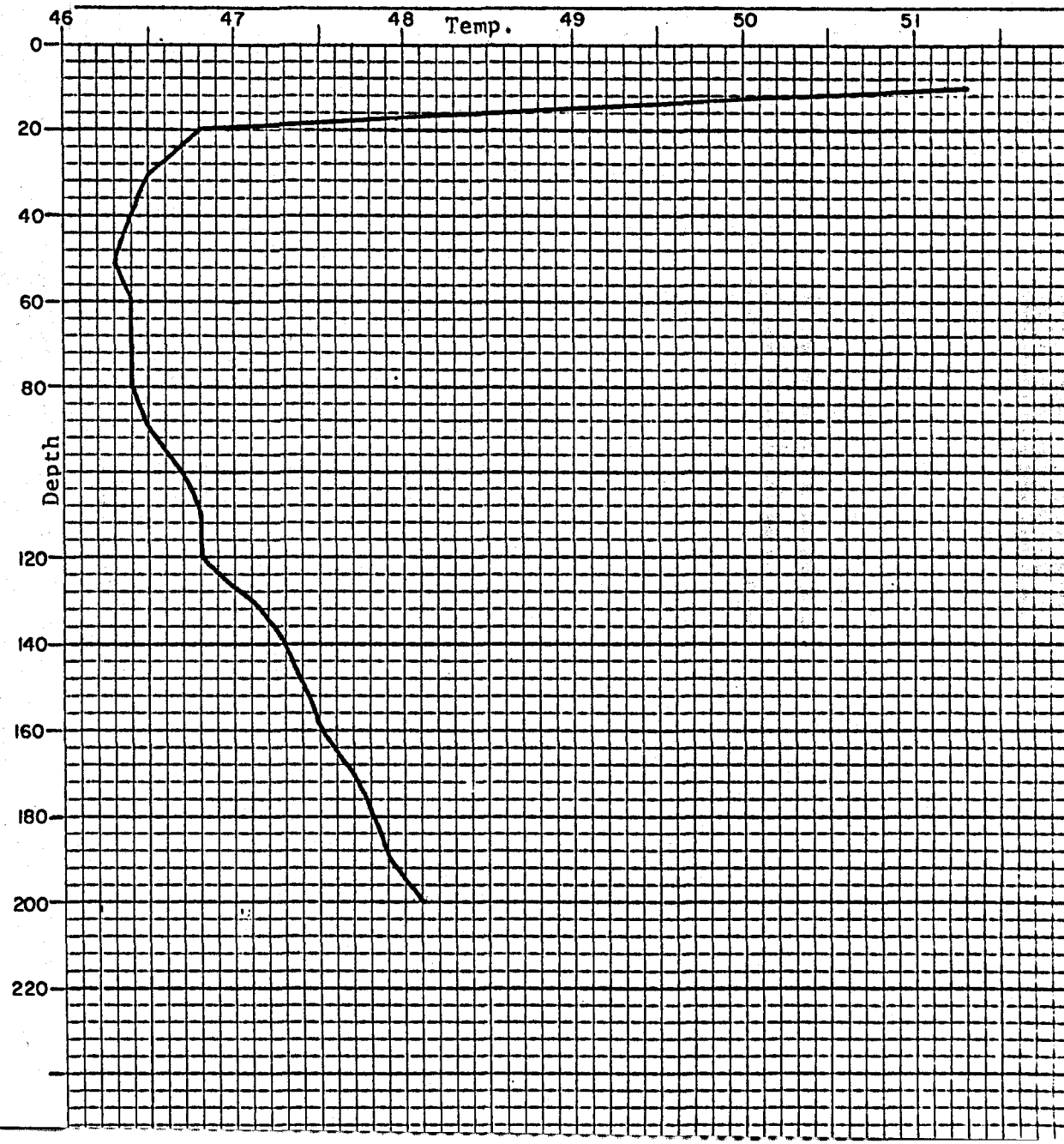


Prospect Lakeview Hole L-30 Location T37S-R18E SW SW 3 Grad. 1.4°F/100'

Probe Box Cable Comments

Date 10/15/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	10.7	51.3						
20	8.2	46.8						
30	8.05	46.5						
40	8.0	46.4						
50	7.95	46.3						
60	8.0	46.4						
70	8.0	46.4						
80	8.0	46.4						
90	8.05	46.5						
100	8.15	46.7						
110	8.2	46.8						
120	8.25	46.85						
130	8.4	47.1						
140	8.5	47.3						
150	8.55	47.4						
160	8.6	47.5						
170	8.7	47.7						
180	8.8	47.8						
190	8.85	47.9						
200	8.95	48.1						

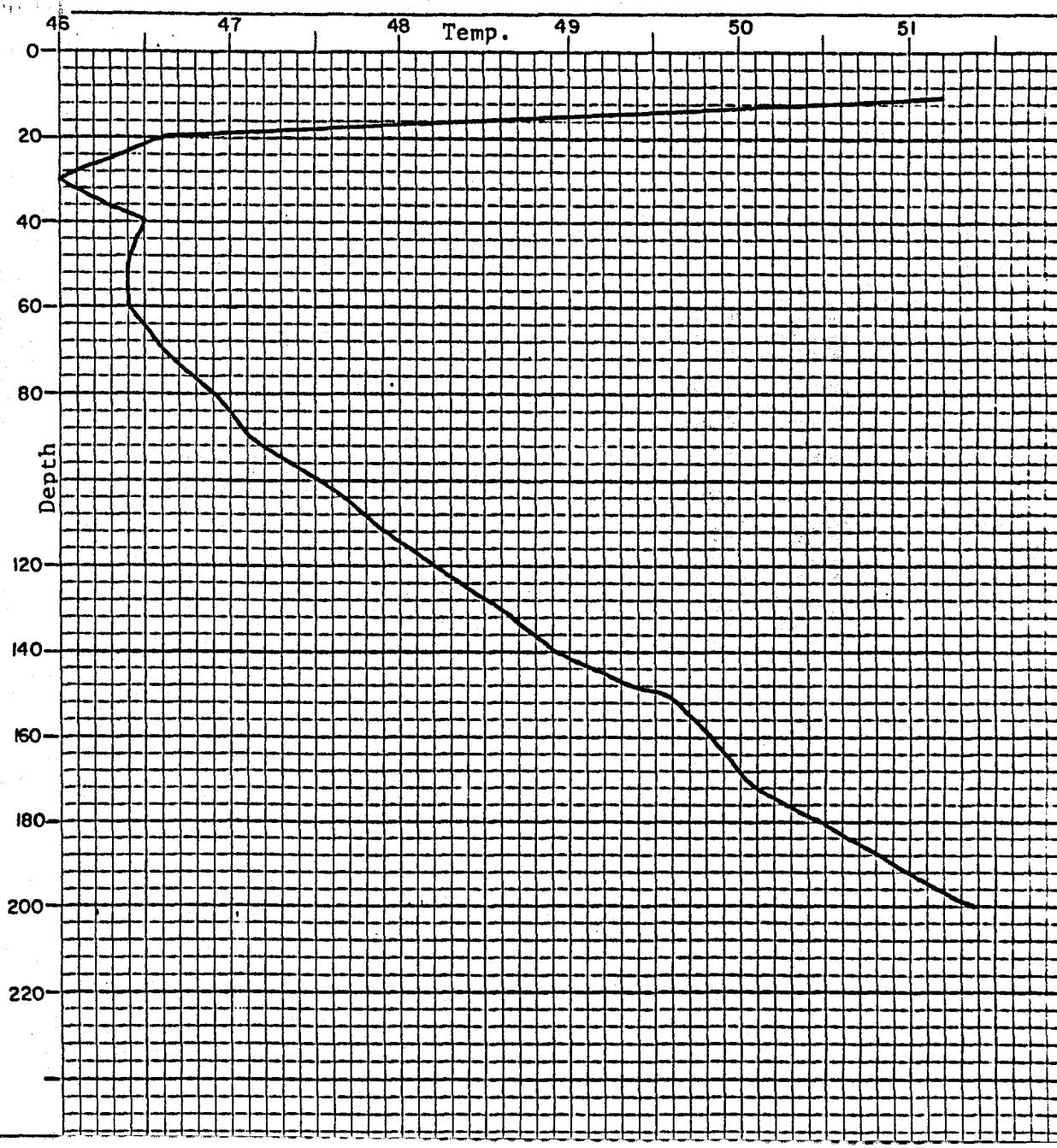


Prospect Lakeview Hole L-31 Location T37S-R18E NW NW 11 Grad. 3.8°F/100'

Probe Box Cable Comments

Date 10/15/79 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	10.65	51.2						
20	8.1	46.6						
30	7.75	45.95						
40	8.05	46.5						
50	8.0	46.4						
60	8.0	46.4						
70	8.1	46.6						
80	8.3	46.9						
90	8.4	47.1						
100	8.6	47.5						
110	8.8	47.8						
120	9.0	48.20						
130	9.2	48.6						
140	9.4	48.9						
150	9.75	49.55						
160	9.9	49.8						
170	10.0	50.0						
180	10.25	50.45						
190	10.5	50.9						
200	10.75	51.35						
205	10.82							

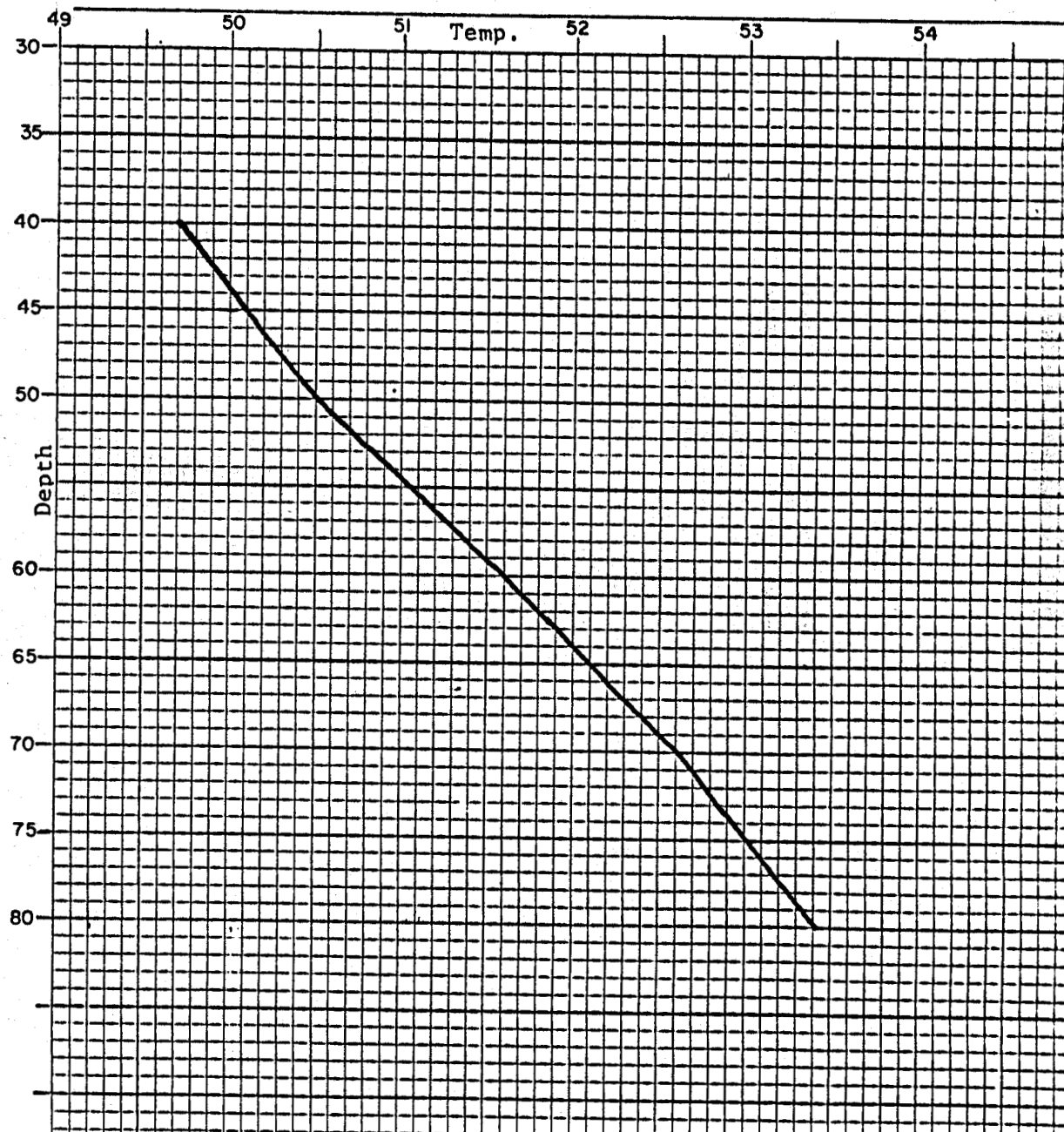


Prospect Lakeview Hole L-32 Location T37S-R18E SE SW 27 Grad. 9.2°F

Probe Box Cable Comments Abandoned

Date 7/21/80 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
40	9.85	49.7						
50	10.3	50.5						
60	10.9	51.6						
70	11.45	52.6						
80	11.9	53.4						

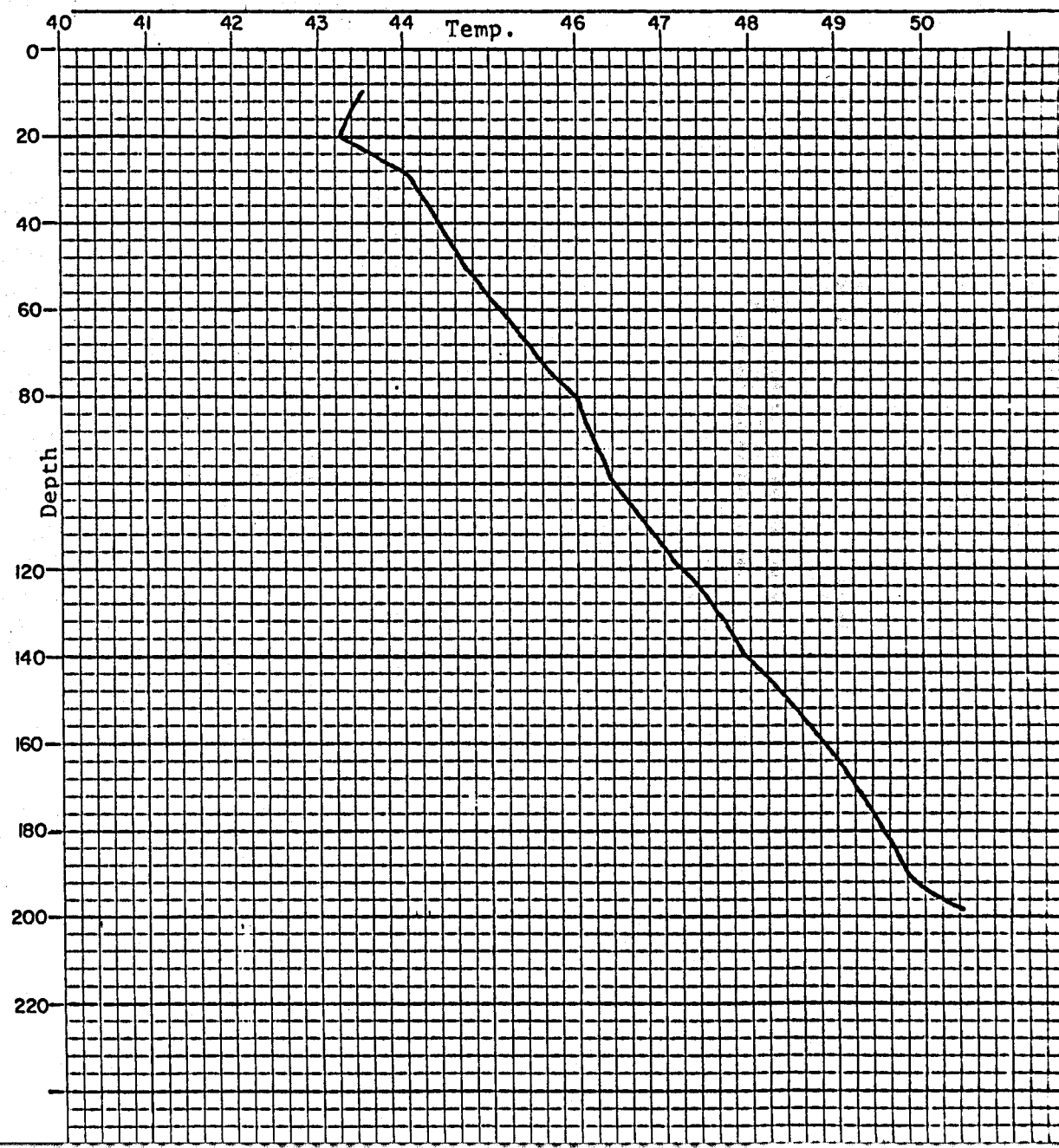


Prospect Lakeview Hole L-33 Location T37S-R18E NW SW 33 Grad. 4.5°F/100'

Probe Box Cable Comments Abandoned 8/18/80

Date 7/21/80 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	6.4	43.5						
20	6.25	43.25						
30	6.75	44.1						
40	6.9	44.4						
50	7.05	44.7						
60	7.25	45.1						
70	7.5	45.5						
80	7.8	46.0						
90	7.9	46.2						
100	8.0	46.4						
110	8.2	46.8						
120	8.45	47.2						
130	8.65	47.6						
140	8.85	47.9						
150	9.1	48.4						
160	9.35	48.8						
170	9.55	49.2						
180	9.7	49.5						
190	9.9	49.8						
198	10.35	50.6						



Prospect Lakeview Hole L-34

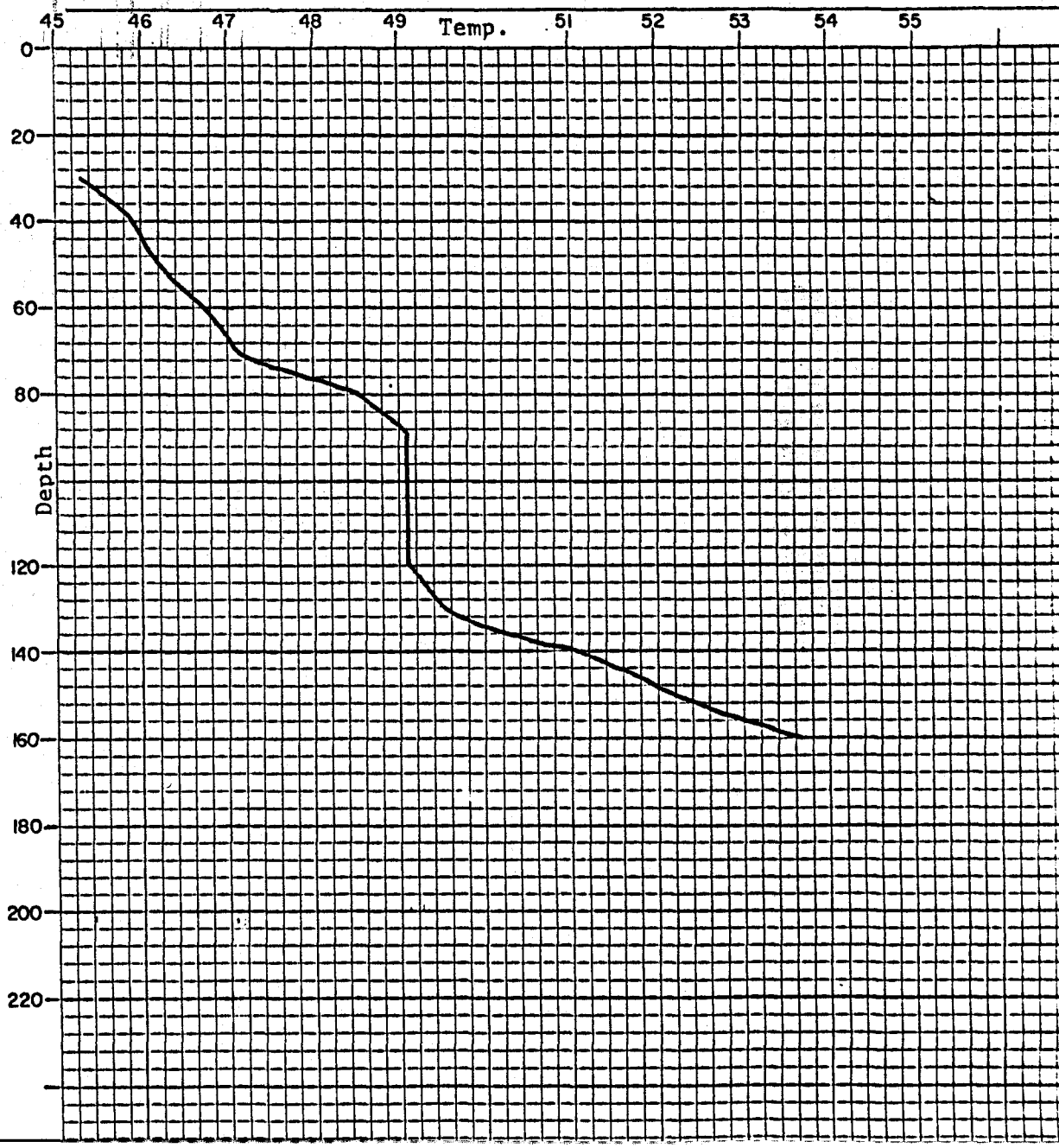
Location T37S-R18E SW NE SE 11 Grad. 13.5°F/100'

Probe Box Cable

Comments This hole produced a lot of water during drilling and would make a good water well. Abandoned.

Date Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
30	7.4	45.3						
40	7.7	45.9						
50	7.9	46.2						
60	8.15	46.7						
70	8.4	47.1						
80	9.15	48.5						
90	9.5	49.1						
100	9.5	49.1						
110	9.5	49.1						
120	9.5	49.1						
130	9.75	49.55						
140	10.5	50.9						
150	11.15	52.1						
160	12.0	53.6						



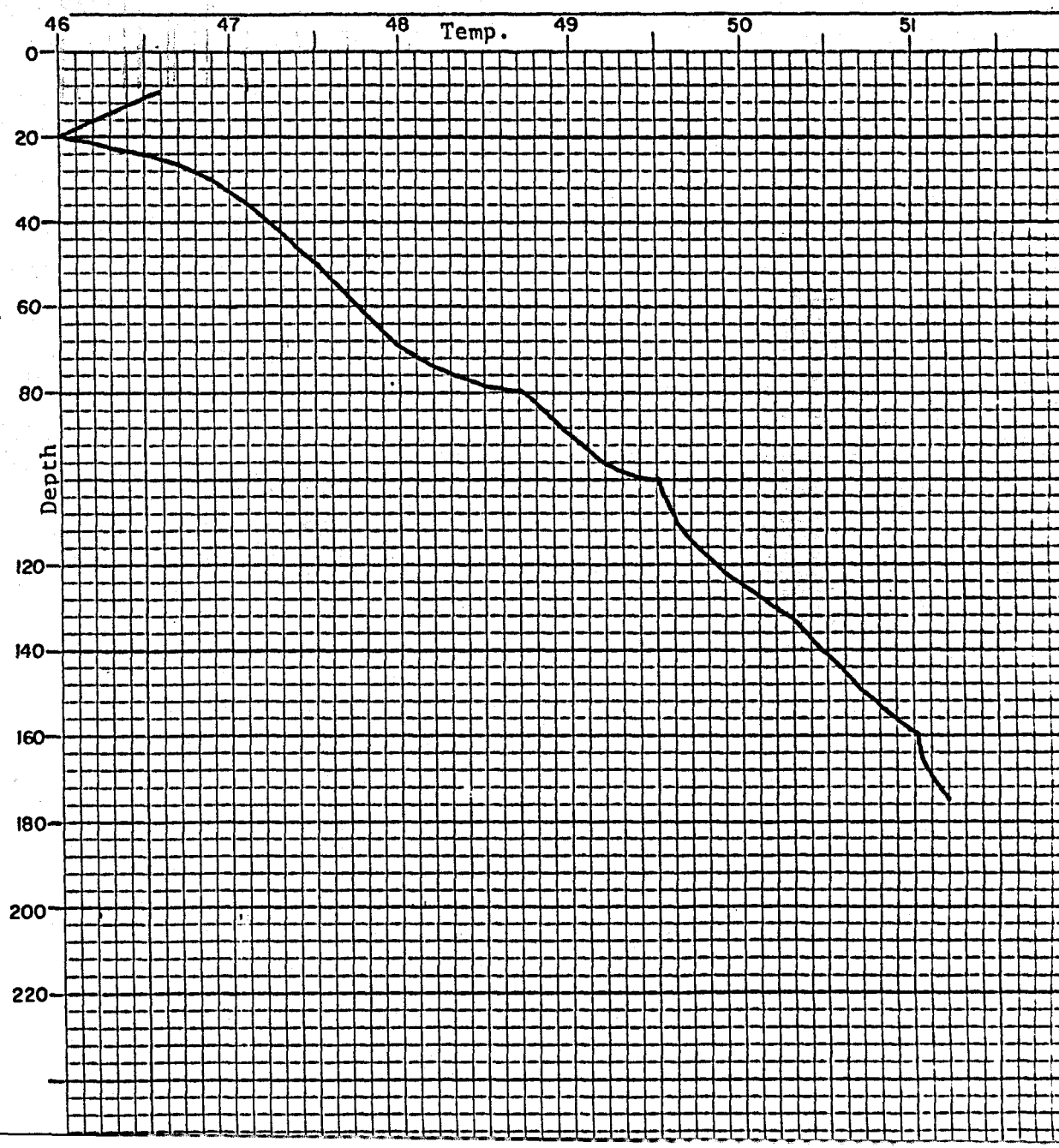
Prospect Lakeview Hole L-35 Location T37S-R19E SW NW 29 Grad. 2.6°F/100'

Probe Box Cable

Comments Hole drilled to 260 but caved to 175 before running pipe.
Abandoned 8/18/80

Date 7/21/80 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	8.1	46.6						
20	7.8	46.0						
30	8.25	46.9						
40	8.45	47.2						
50	8.6	47.5						
60	8.75	47.75						
70	8.9	48.0						
80	9.3	48.7						
90	9.45	49.0						
100	9.7	49.5						
110	9.8	49.6						
120	9.9	49.8						
130	10.1	50.2						
140	10.25	50.45						
150	10.4	50.7						
160	10.55	51.0						
170	10.6	51.1						
175	10.65	51.2						

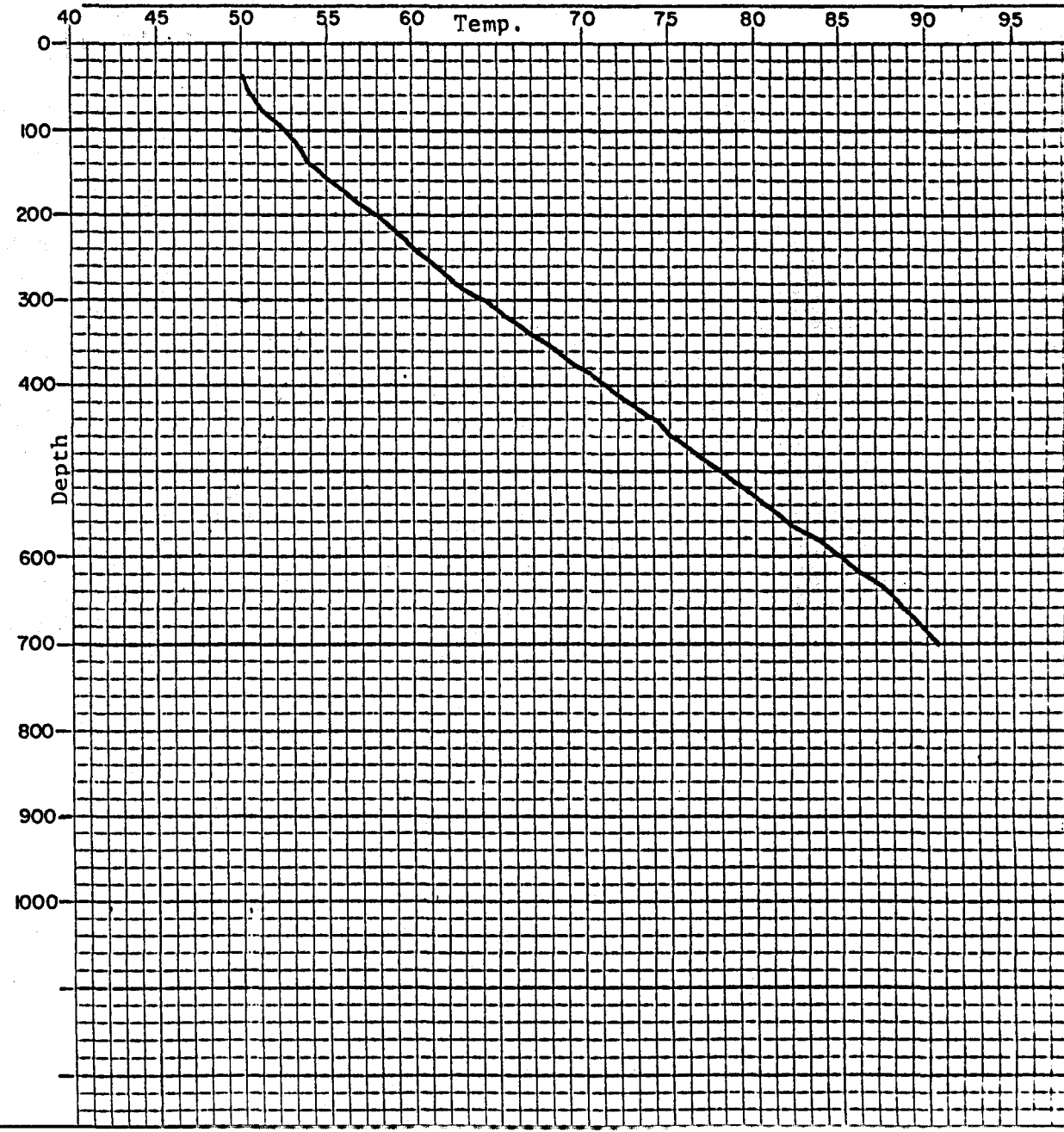


Prospect Lakeview Hole K-5 Location T37S-R18E SE NE 14 Grad 6.7°F/100' from 140-700

Probe Box Cable Comments Abandoned 10/3/78

Date 10/3/78 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
40	10.0	50.0	640	30.8	87.4			
60	10.2	50.4	660	31.4	88.5			
80	10.65	51.2	680	32.15	89.85			
100	11.3	52.3	900	32.5	90.5			
120	11.8	53.2						
140	12.1	53.8						
160	12.75	55.0						
180	13.5	56.3						
200	14.2	57.6						
220	15.0	59.0						
240	15.55	60.0						
260	16.25	61.3						
280	16.9	62.4						
300	17.8	64.0						
320	18.55	65.4						
340	19.4	66.9						
360	20.1	68.2						
380	20.9	69.6						
400	21.65	71.0						
420	22.4	72.3						
440	23.2	73.7						
460	23.85	74.95						
480	24.7	76.5						
500	25.5	77.9						
520	26.1	79.0						
540	26.9	80.4						
560	27.7	81.8						
580	28.45	83.2						
600	29.2	84.5						
620	29.95	85.9						

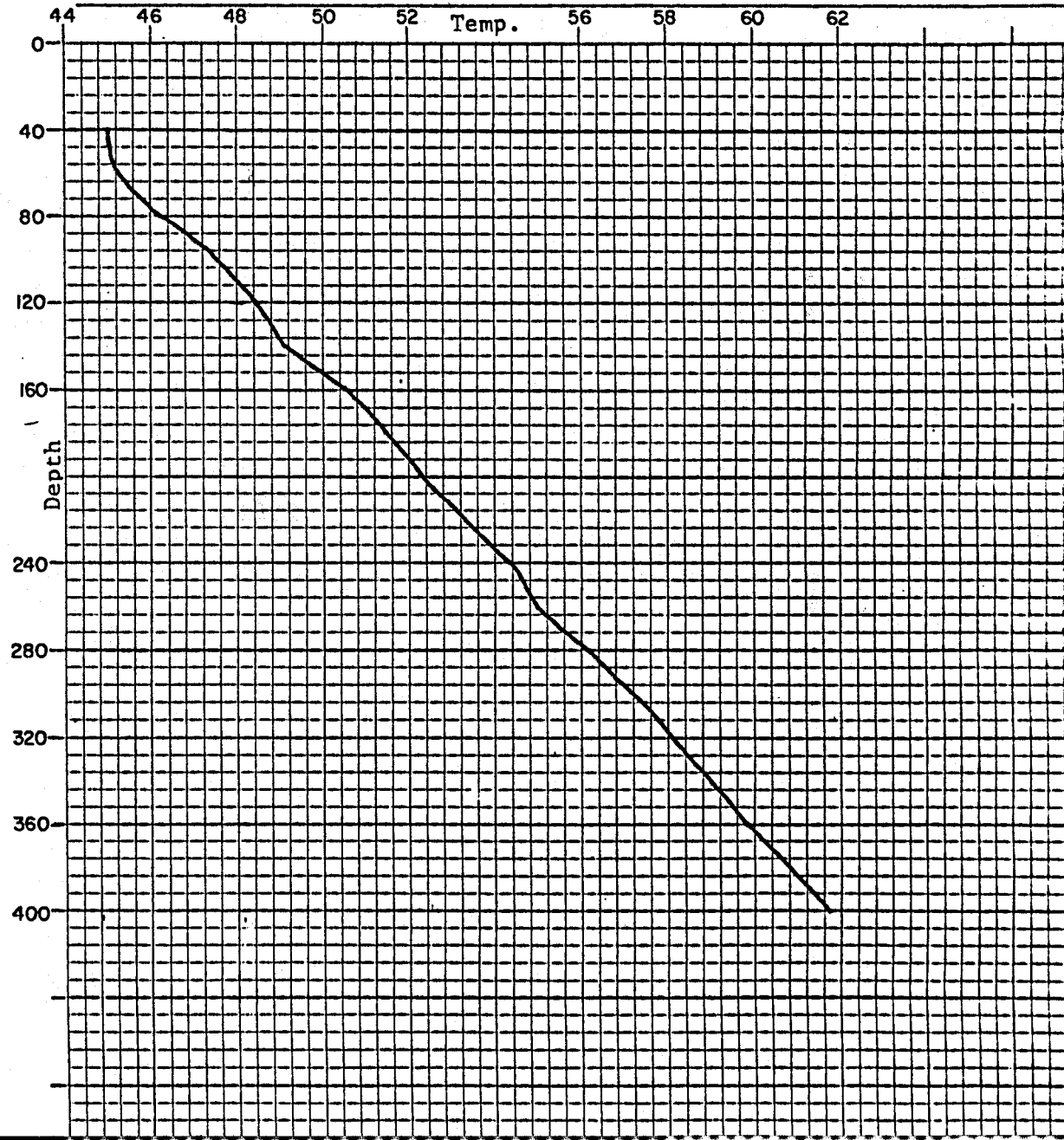


Prospect Lakeview Hole K-6 Location T37S-R18E SW NW 24 Grad. 4.7°F/100'

Probe Box Cable Comments Abandoned 10.2.78. All the PVC was pulled out of this hole.

Date 10/2/78 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
40	7.2	45.0						
60	7.35	45.2						
80	7.90	46.2						
100	8.60	47.5						
120	9.1	48.4						
140	9.5	49.1						
160	10.25	50.5						
180	10.80	51.4						
200	11.3	52.3						
220	11.85	53.3						
240	12.4	54.3						
260	12.7	54.9						
280	13.4	56.1						
300	14.0	57.2						
320	14.5	58.1						
340	14.95	58.9						
360	15.45	59.8						
380	16.0	60.8						
400	16.5	61.7						



Prospect Lakeview Hole K-7

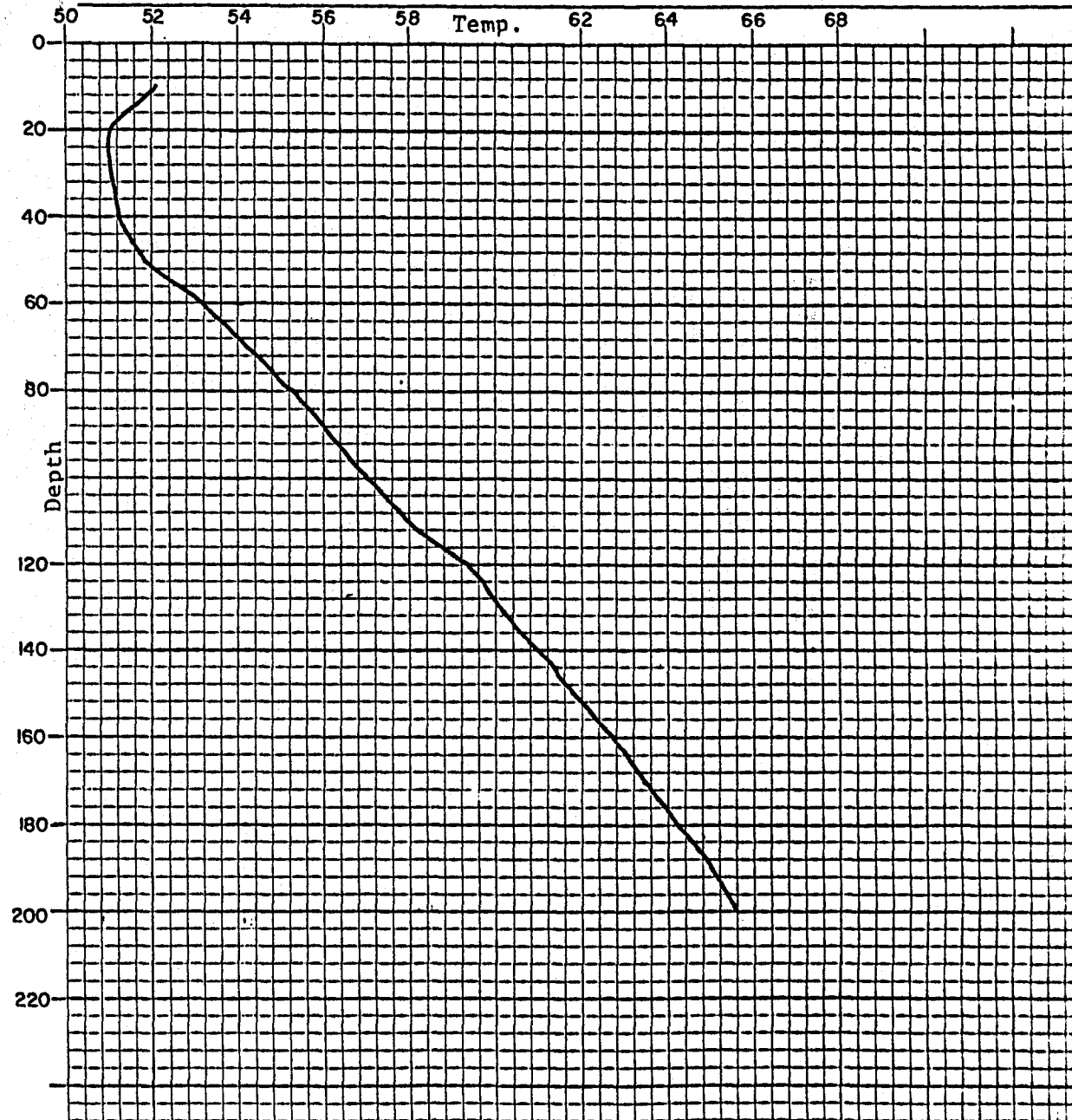
Probe Box Cable

Location T37S-R18E, 10 NE SE Grad. 8.0°F/100' from 120-190

Comments Abandoned 10/3/78. All PVC pipe pulled out of the hole.

Date Time Opr
10/3/78

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
10	11.15	52.1						
20	10.6	51.08						
30	10.6	51.08						
40	10.7	51.26						
50	11.0	51.8						
60	11.75	53.1						
70	12.30	54.2						
80	12.95	55.3						
90	13.40	56.1						
100	13.90	57.0						
110	14.4	57.9						
120	15.2	59.4						
130	15.6	60.1						
140	16.05	60.9						
150	16.55	61.8						
160	17.05	62.70						
170	17.45	63.40						
180	17.90	64.2						
190	18.35	65.0						
196	18.65	65.55						

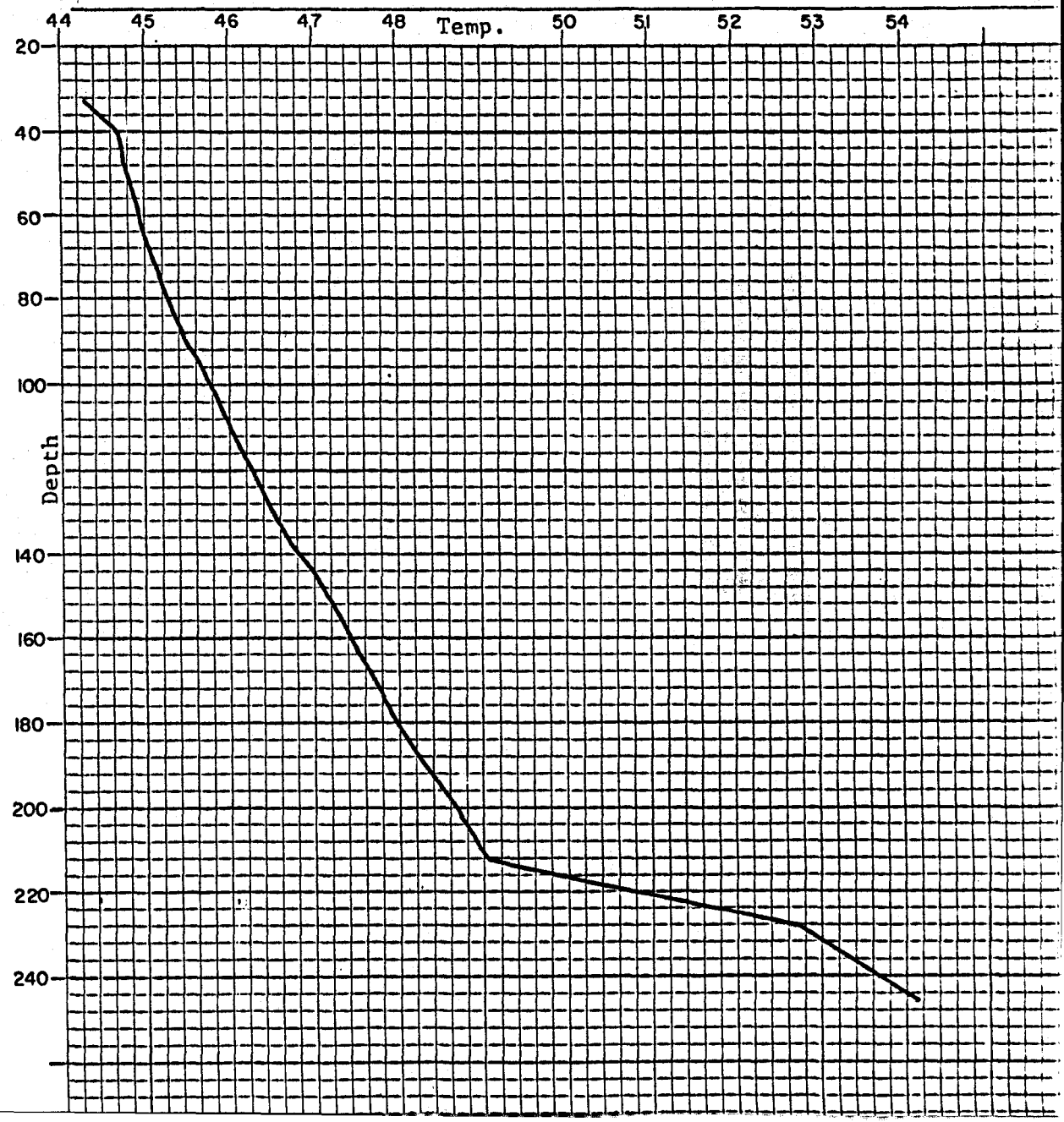


Prospect Lakeview Hole K-9 Location T37S-R18E 25 NW NE Grad. irregular

Probe Box Cable Comments

Date Time Opr
8/31/77

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
32.8	6.840	44.31						
41.0	7.050	44.69						
49.2	7.100	44.78						
57.4	7.160	44.89						
65.6	7.220	45.00						
73.8	7.310	45.16						
82.0	7.400	45.32						
90.2	7.510	45.52						
98.4	7.610	45.70						
106.6	7.720	45.90						
114.8	7.840	46.11						
123.0	7.950	46.31						
131.2	8.060	46.51						
139.4	8.200	46.76						
147.6	8.350	47.03						
164.0	8.620	47.52						
180.4	8.880	47.98						
196.8	9.170	48.51						
213.2	9.480	49.06						
229.6	11.470	52.65						
246.0	12.310	54.16						

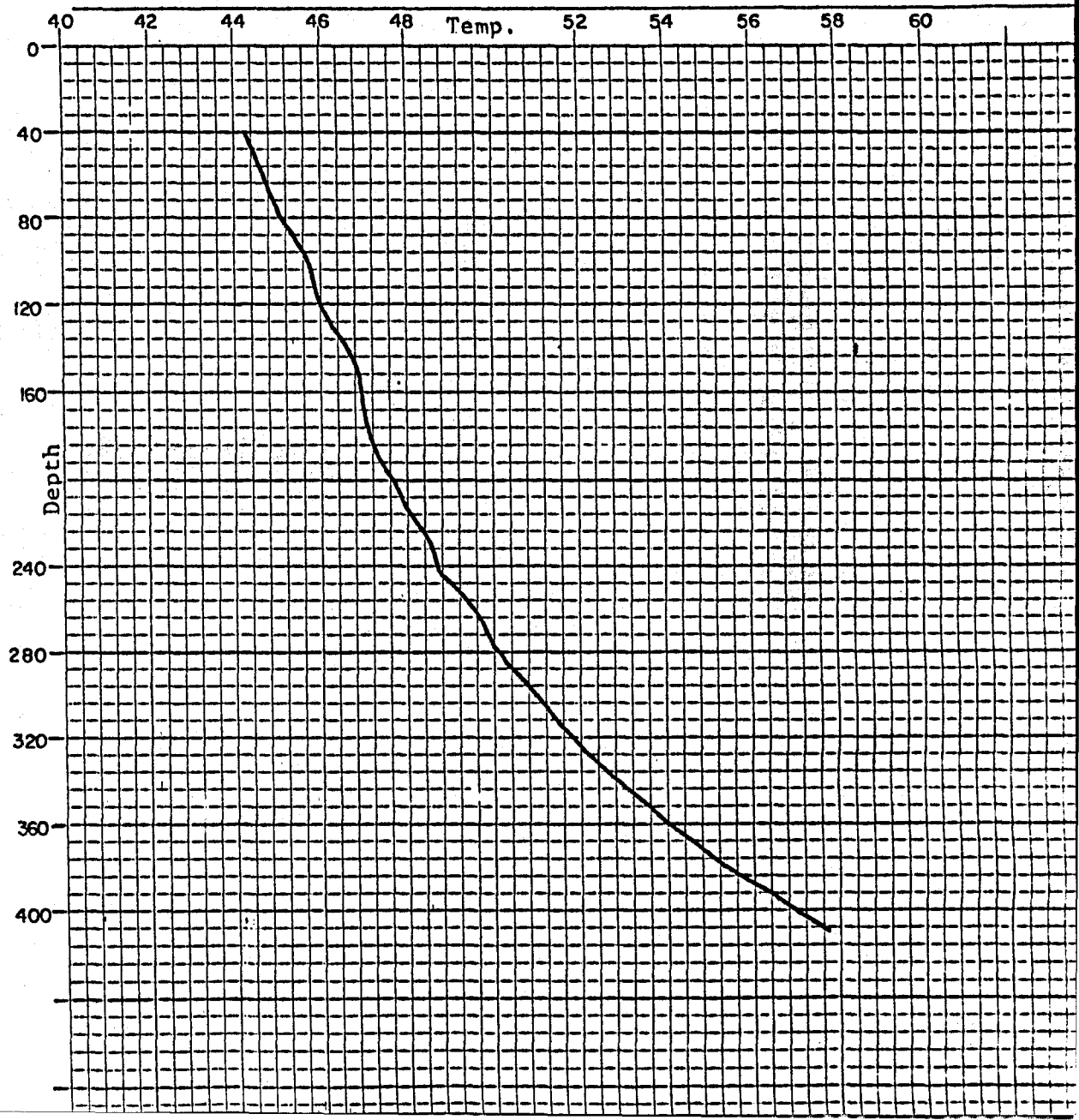


Prospect Lakeview Hole K-10 Location T37S-R18E 25 SE NE Grad. increasing

Probe Box Cable Comments

Date Time Opr
8/31/77

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
41.0	6.830	44.29						
49.2	6.930	44.47						
57.4	6.980	44.56						
65.6	7.070	44.73						
73.8	7.170	44.91						
82.0	7.280	45.10						
90.2	7.450	45.41						
98.4	7.560	45.61						
106.6	7.630	45.73						
114.8	7.650	45.77						
123.0	7.780	46.00						
131.2	7.930	46.27						
139.4	8.070	46.53						
147.6	8.200	46.76						
164.0	8.320	46.98						
180.4	8.430	47.17						
196.8	8.620	47.52						
213.2	8.820	47.88						
229.6	9.170	48.51						
246.0	9.290	48.72						
262.4	9.720	49.50						
278.8	9.940	49.89						
295.2	10.400	50.72						
311.6	10.830	51.49						
328.0	11.130	52.03						
344.4	11.640	52.95						
360.8	12.220	54.00						
377.2	12.890	55.20						
393.6	13.620	56.52						
410.0	14.280	57.70						

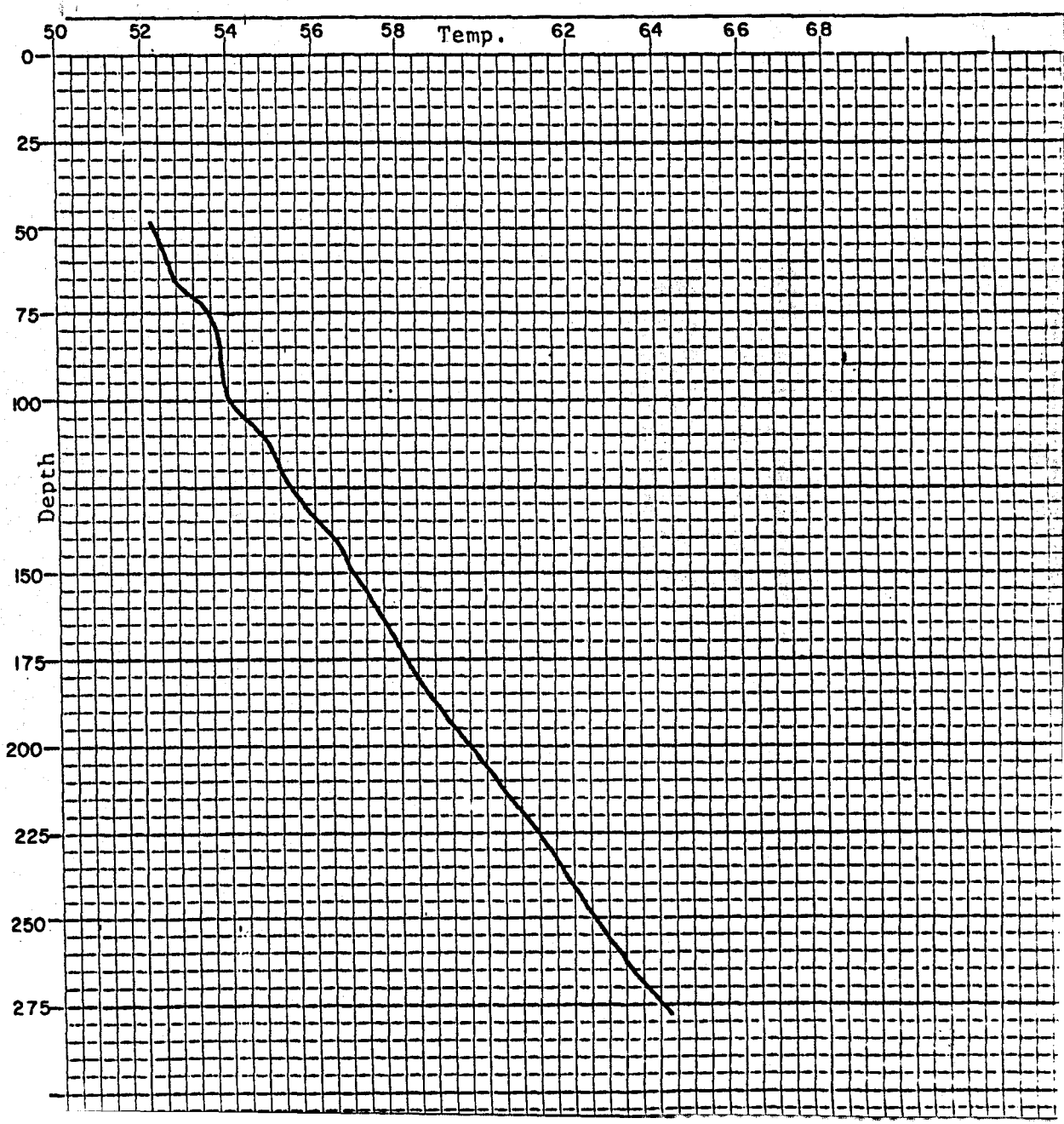


Prospect Lakeview Hole K-11 Location T37S-R18E 26 SW SE Grad. 5.6°F/100' from 100-279

Probe Box Cable Comments

Date Time Opr
8/31/77

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
49.2	11.240	52.23						
65.6	11.510	52.72						
73.8	11.930	53.47						
82.0	12.070	53.73						
90.2	12.110	53.80						
98.4	12.200	53.96						
106.6	12.500	54.50						
114.8	12.720	54.90						
123.0	12.930	55.27						
131.2	13.170	55.71						
139.4	13.500	56.30						
147.6	13.760	56.77						
164.0	14.190	57.54						
180.4	14.640	58.35						
196.8	15.190	59.34						
213.2	15.750	60.35						
229.6	16.290	61.32						
246.0	16.820	62.28						
262.4	17.320	63.18						
278.8	17.890	64.20						

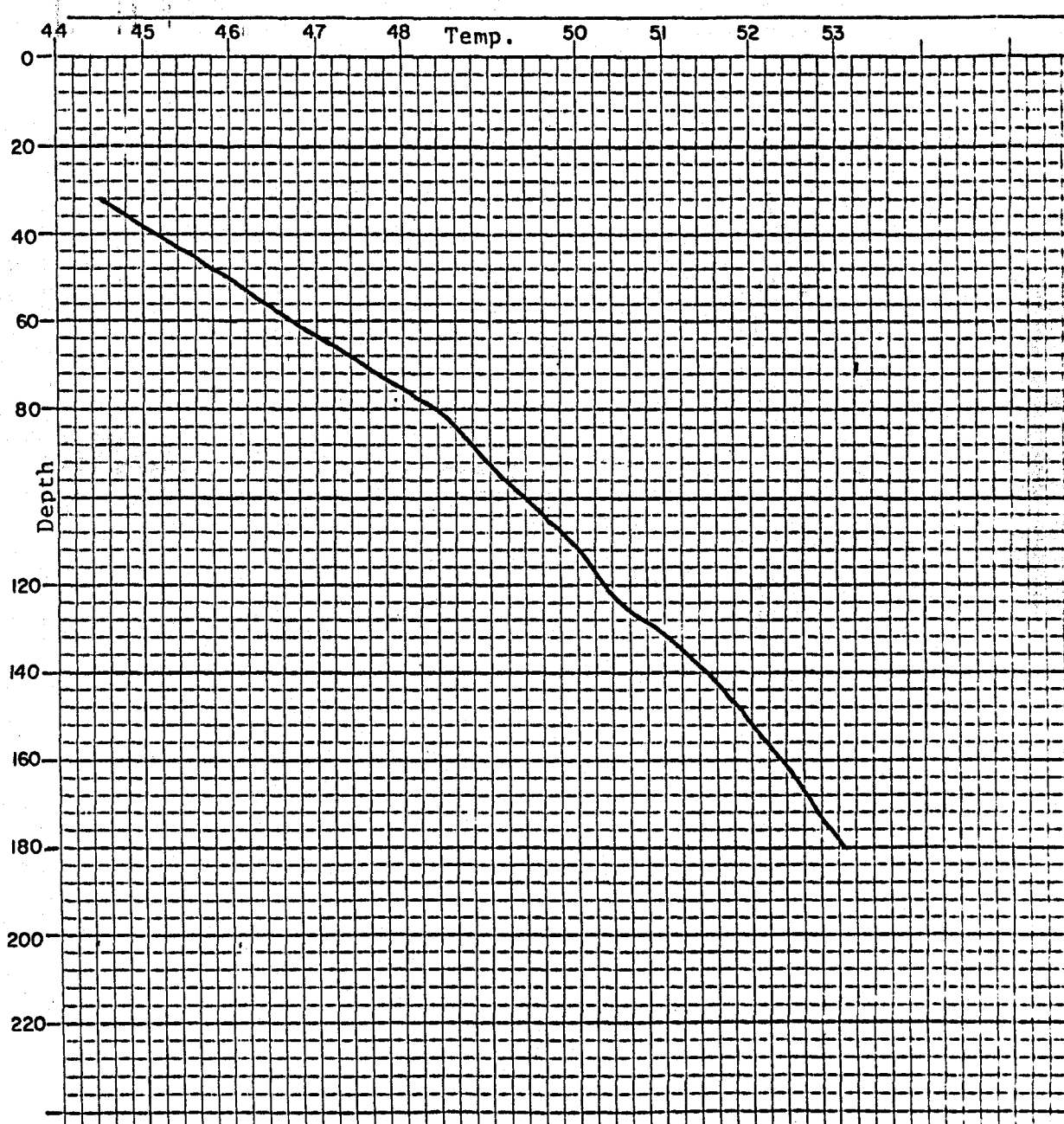


Prospect Lakeview Hole K-12 Location T37S-R19E 30 NW SE Grad. 4.7°F/100' from 140-180

Probe Box Cable Comments

Date Time Opr
8/30/77

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
32.8	6.950	44.51						
49.2	7.750	45.95						
65.6	8.390	47.10						
82.0	9.200	48.56						
90.2	9.380	48.88						
98.4	9.610	49.30						
106.6	9.810	49.66						
114.8	10.040	50.07						
123.0	10.210	50.38						
131.2	10.500	50.90						
139.4	10.760	51.37						
147.6	10.990	51.78						
164.0	11.380	52.48						
180.4	11.700	53.06						



Prospect Lakeview Hole K-26

Probe Box Cable

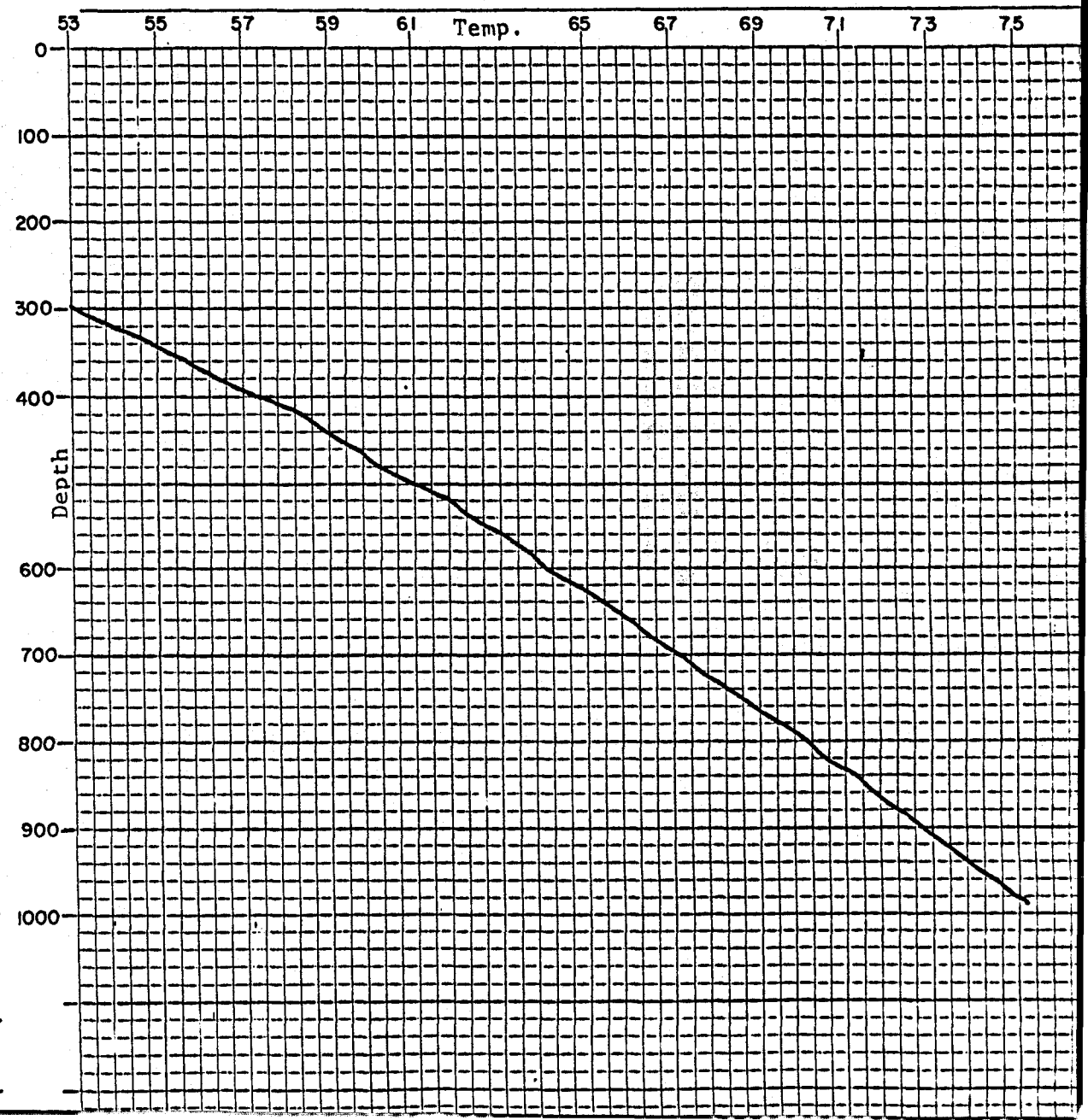
Location T37S-R19E NW SW 30 Grad. 2.82°F/100' from 520-980

Comments U_3O_8 hole drilled by Western Nuclear in 1981

Water level 300'

Date 8/19/81 Time Opr

Depth	T°C	T°F	Depth	T°C	T°F	Depth	T°C	T°F
300	11.65	53.0	880	22.3	72.1			
320	12.15	53.9	900	22.6	72.7			
340	12.65	54.8	920	22.9	73.2			
360	13.1	55.6	940	23.2	73.8			
380	13.5	56.3	960	23.55	74.4			
400	14.0	57.2	980	23.8	74.8			
420	14.6	58.3	990	23.95	75.1			
440	14.9	58.8						
460	15.35	59.6						
480	15.6	60.1						
500	16.05	60.9						
520	16.55	61.8						
540	16.8	62.2						
560	17.15	62.9						
580	17.5	63.5						
600	17.8	64.0						
620	18.15	64.7						
640	18.5	65.3						
660	18.8	65.8						
680	19.1	66.4						
700	19.5	67.1						
720	19.8	67.6						
740	20.1	68.2						
760	20.45	68.8						
780	20.8	69.4						
800	21.15	70.1						
820	21.4	70.5						
840	21.7	71.1						
860	22.0	71.6						



R. 17 E. | R. 18 E. | R. 19 E.

T. 35 S.

T. 36 S.

T. 37 S.

T. 38 S.

HUMBLE OIL TEST (T.D.=12,093')

L-13 (T.D.=290') 4.4°F/100'
L-10 (T.D.=200') 10.8°F/100'
L-18 (T.D.=200') 4.0°F/100'
L-23 (T.D.=180') 1.0°F/100'
L-19 (T.D.=200') 4.9°F/100'
L-15 (T.D.=98') isothermal
L-9 (T.D.=200') 3.9°F/100'
L-12 (T.D.=495') 4.5°F/100'
L-30 (T.D.=200') 1.4°F/100'
L-31 (T.D.=200') 3.8°F/100'
L-14 (T.D.=200') 4.8°F/100'
K-7 (T.D.=200') 8.0°F/100'
L-3 (T.D.=112')
L-34 (TD 60') 13.5°
STRAT. TEST NO. 2 (TD=575') ≈10°F
L-16 (T.D.=200') 1.3°F/100'
L-8 (T.D.=200') 3.9°F/100'
L-6 (TD=850') 7.4°F
K-5 (T.D.=690') 6.7°F/100'
STRAT. TEST NO. 3 (T.D.=1090')
STRAT. TEST NO. 4 (T.D.=860')
L-22 (T.D.=200') 4.0°F/100'
L-17 (T.D.=200') 6.0°F/100'
L-20 (T.D.=200') 3.8°F/100'
K-6 (T.D.=400') 4.7°F/100'
L-33 (TD=200') 4.5°F/100'
K-9 (T.D.=246') irregular
L-2 (T.D.=340') 7.5°F/100'
L-29 (T.D.=200') 9.6°F/100'
K-10 (T.D.=410') 7.2°F/100'/?
L-35 (TD=180') 2.6°F/100'
K-12 (T.D.=180') 4.6°F/100'
K-26 (T.D.=990') 2.8°F
L-4 (T.D.=978') 2.9°F/100'
L-32 (TD=80') 9.2°F/100'
STRAT. TEST NO. 1 (TD=1530') 10.0°F/100'
L-5 (T.D.=940') 4.0°F/100'
K-11 (TD=279') 5.6°F/100'
L-24 (T.D.=500') 4.8°F/100'
L-11 (T.D.=200') 7.1°F/100'
L-21 (T.D.=200') 5.0°F/100'
L-28 (T.D.=200') 2.8°F/100'
L-7 (T.D.=550') 4.7°F/100'
L-25 (T.D.=200') 3.7°F/100'
L-1 (T.D.=567') 3.1°F/100'
L-26 (T.D.=200') 3.0°F/100'

NOTE: BASE TAKEN FROM SHOESTRING BUTTE, COLEMAN POINT, COUGAR PEAK, AND COX FLAT, OREGON 7.5' U.S.G.S. TOPO. SHEETS

0 4000' 8000' 12000'
SCALE: 1"=4000'

REVISIONS	DATE
UPDATE	2/81

PLATE 1

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA
NATURAL RESOURCES GROUP
ENERGY MINERALS DIVISION

TEMPERATURE-GRADIENT DRILL HOLES
LAKEVIEW GEOTHERMAL PROSPECT
LAKE COUNTY, OREGON

RENO, NEVADA

R.17 E. | R.18 E. | R.19 E.

T.35 S. | T.36 S. | T.37 S. | T.38 S.

HUMBLE OIL TEST (T.D.=12,093')

L-13(T.D.=290') 54°F
L-10(T.D.=200') 67°F
L-18(T.D.=200') 49°F
L-23(T.D.=180') 62°F
L-19(T.D.=200') 56°F
L-15(T.D.=98')
L-9(T.D.=200') 50°F
L-12(T.D.=495') 54°F
L-30(T.D.=200') 48°F
L-31(T.D.=200') 51°F
L-14(T.D.=200') 49°F
K-7(T.D.=200') 65°F
L-34(TD=160') 59°F
L-16(T.D.=200') 43°F
L-6(TD=850') 63°F
STRAT. TEST NO.2 (TD=575')
L-8(T.D.=200') 54°F
K-5(T.D.=690') 58°F
STRAT. TEST NO. 3 (T.D.=1090')
STRAT. TEST NO.4 (T.D.=860') 55°F
L-17(T.D.=200') 48°F
L-22(T.D.=200') 53°F
L-20(T.D.=200') 53°F
K-6(T.D.=400') 52°F
L-33(TD=200') 51°F
K-9(T.D.=246') 48°F
L-2(T.D.=340') 64°F
L-29(T.D.=200') 62°F
L-35(TD=175') 52°F
K-10(T.D.=410') 47°F
K-12(T.D.=180') 54°F
K-26 (T.D.=990') 49°F
L-4(T.D.=978') 46°F
STRAT. TEST NO. 1 (TD=1530' 68.2°F)
L-5(T.D.=940') 54°F
K-11(TD=279') 59°F
L-11(T.D.=200') 59°F
L-21(T.D.=200') 51°F
L-24(T.D.=500') 49°F
L-28(T.D.=200') 48°F
L-7(T.D.=550') 57°F
L-1(T.D.=567') 54°F
L-25(T.D.=200') 53°F
L-26 (T.D.=200') 47°F

65°F | 60°F | 55°F | 50°F | 45°F

FREMONT NATIONAL FOREST

NOTE: BASE TAKEN FROM SHOESTRING BUTTE, COLEMAN POINT, COUGAR PEAK, AND COX FLAT, OREGON 7.5' U.S.G.S. TOPO. SHEETS

0 4000' 8000' 12000'

SCALE: 1"=4000'

REVISIONS	DATE
UPDATE	10/80
UPDATE	2/81
UPDATE	9/81

PLATE 2

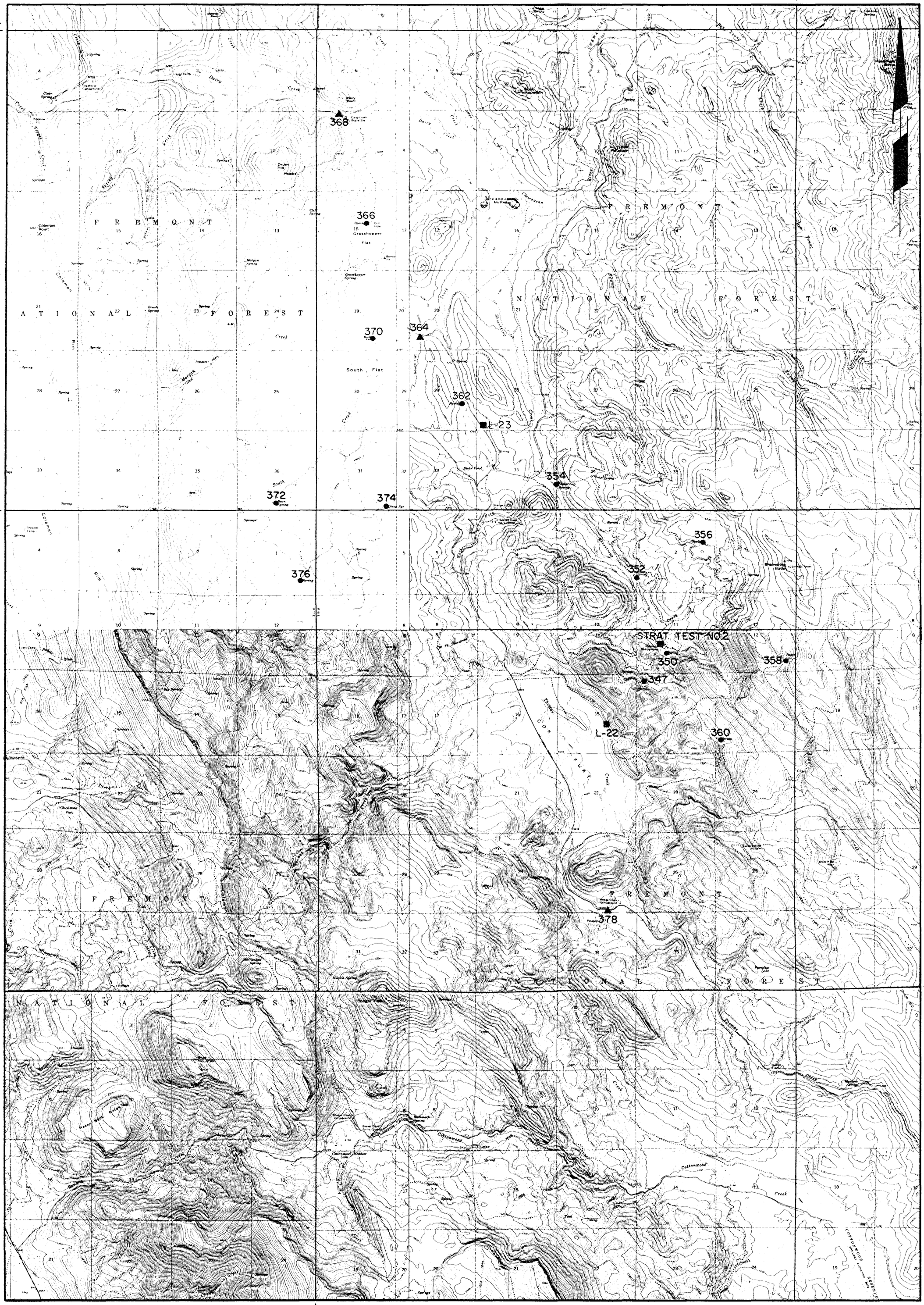
PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA
NATURAL RESOURCES GROUP
ENERGY MINERALS DIVISION

ISOTHERMAL MAP - 200 FOOT DEPTH
LAKEVIEW GEOTHERMAL PROSPECT
LAKE COUNTY, OREGON

RENO, NEVADA

R. 17 E. | R. 18 E. | R. 19 E.

T. 35 S. | T. 36 S. | T. 37 S. | T. 38 S.



NOTE: BASE TAKEN FROM SHOESTRING BUTTE, COLEMAN POINT, COUGAR PEAK, AND COX FLAT, OREGON 7.5' U.S.G.S. TOPO. SHEETS.

0 4000' 8000' 12000'

SCALE: 1"=4000'

REVISIONS	DATE

PLATE 3

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA
NATURAL RESOURCES GROUP
ENERGY MINERALS DIVISION

WATER SAMPLE LOCATION MAP

LAKEVIEW GEOTHERMAL PROSPECT

LAKE COUNTY, OREGON

RENO, NEVADA

LAKEVIEW WATER ANALYSES

NUMBER and SOURCE	LOCATION	FLOW (GPM)	pH		TEMP.		SPECIFIC CONDUCTANCE µmhos/cm	ppm eq/L		ppm eq/L		ppm eq/L		ppm eq/L		ppm						SAMPLE BOOK NUMBER
			LAB	FIELD	°C	°F		Ca	Mg	K	Na	CO_3	HCO_3	SO_4	Cl	B	Li	F	NO_3	NH_4 (ppb)	SiO_2	
Spring	37S,18E NW NW 14	1	6.89	7.35	8.05	46.5	60.5	2.9 .15	1.1 .09	3.5 .09	7.0 .31	0	38 .62	<5 0	1.8 .05	<.03	.0023	<.1	<.04	62	49	347
Spring	37S,18E NW SW 11	1	7.51	7.40	8.1	46.6	143.2	11 .55	4.5 .37	5.7 .15	10.0 .44	0 0	87 1.43	<5 0	4.7 .13	<.03	.014	<.1	<.04	44	71	350
Spring	37S,18E SW SW 2	10-20	7.38	7.05	9.75	49.5	132.7	11 .55	3.2 .26	3.6 .09	11.0 .48	0 0	77 1.26	<5 0	3 .09	<.03	.0021	<.1	<.04	33	54	352
Shoe-string Spring	36S,18E NE SE 33	10	7.7	7.55	9.0	48.3	194.9	21 1.05	7.8 .64	2.1 .05	9.1 .40	0 0	110 1.80	<5 0	3.9 .11	<.03	.0023	<.1	.51	35	47	354
Spring	37S,18E SE NE 2	1-2	7.69	6.7	6.7	44.1	166.2	14 .70	5.8 .48	6.6 .17	9.4 .41	0 0	100 1.67	<5 0	1.8 .05	<.03	.0012	<.1	<.04	35	71	356
Boggs Spring	37S,18E SE SE 12	< 10	7.28	6.05	5.2	41.4	76.3	6.6 .33	2.9 .24	1.2 .03	4.5 .20	0 0	47 .77	<5 0	.9 .02	<.03	.0009	<.1	<.04	38	49	358
Spring	37S,18E SW SW 13	5	7.68	7.55	12.75	55.0	159.9	12 .60	6.3 .52	6.3 .16	10 .44	0 0	92 1.51	<5 0	.9 .02	<.03	.019	.10	<.04	30	68	360
Spring	36S,18E NE SE 29	1	7.33	6.75	13.8 (?)	56.8 (?)	107.8	.61 .03	.19 .016	2.7 .07	22 .96	0 0	63 1.03	<5 0	1.5 .04	<.03	.012	.17	<.04	28	54	362
Spring	36S,18E SW NE 18	1	7.6	7.75	13.8	56.8	128.9	9.7 .48	2.6 .21	5.0 .13	12 .52	0 0	77 1.26	<5 0	2.4 .07	<.03	.0067	<.10	<.04	35	66	366
Spring	36S,18E SE SE 19	1-2	7.31	6.85	9.8	49.6	100.0	7.8 .39	1.5 .12	2.4 .06	10 .44	0 0	58 .95	<5 0	2.3 .06	<.03	.0030	.11	<.04	23	47	370
Spring	36S,17E S½ 36	5	7.61	6.65	8.75	47.8	192.7	17 .85	4.1 .34	6.2 .16	16 .70	0 0	110 1.8	<5 0	1.2 .03	<.03	.012	<.10	<.04	23	68	372
Spring	36S,18E SE SE 31	seep	7.60	6.35	7.35 (?)	45.2 (?)	165.8	13 .65	5.0 .41	7.5 .19	12 .52	0 0	110 1.8	<5 0	1.2 .03	<.03	.013	<.10	<.04	27	68	374
Spring	37S,17E SE SE 1	seep	7.89	6.25	7.05 (?)	44.7 (?)	221	22 1.10	10 .82	4.2 .11	9.0 .39	0 0	130 2.13	5.0 .10	1.1 .03	<.03	.0010	<.10	<.04	30	56	376
Thomas Creek	37S,18E NW NE 34	creek	7.59		5.25	41.5	134	13 .65	4.3 .35	2.7 .07	9.2 .40	0 0	84 1.38	<5 0	1.5 .04	<.03	.0018	<.10	<.04	32	32	378
Dairy Creek	36S,18E NE NW 7	creek	7.21	7.75	11.7	53.1	57.2	4.3 .22	2.1 .17	1.8 .05	3.7 .16	0 0	30 .49	5.0 .10	.5 .01	<.03	.0008	<.10	<.04	28	32	368
South Creek	36S,18E SE SW 20	creek	7.49	8.65	15.4	59.7	139.5	14 .70	4.7 .39	2.6 .07	8.9 .39	0 0	84 1.38	<5.0 0	.7 .02	<.03	.0015	<.10	<.04	62	30	364
L-22	37S,18E NW SE 15	artesian well	7.56				295	8.2 .41	1.7 .14	3.2 .08	57.8 2.51	0 0	181 2.97	10 .21	7.0 .20	.12	.005	.64	.326	<20	32	L-22
L-23	36S,18E SW SW 28	artesian well 1-2	8.16		14.0	57.2	208	10.3 .51	4.5 .37	5.6 .14	24.7 1.07	0 0	120 1.97	10 .21	6.0 .20	.08	.011	.24	<.09	<20	37	L-23
Strat. Test 2	37S,18E NE SW 11	artesian well large	7.73				368	2.1 .10	.60 .05	5.6 .14	79.5 3.45	0 0	160 2.62	41.9 .87	16.4 .46	1.37	.0439	2.34	.505		110	1558 Strat Test2

PLATE 4

PIPER PLOT OF LAKEVIEW WATER GEOCHEMISTRY

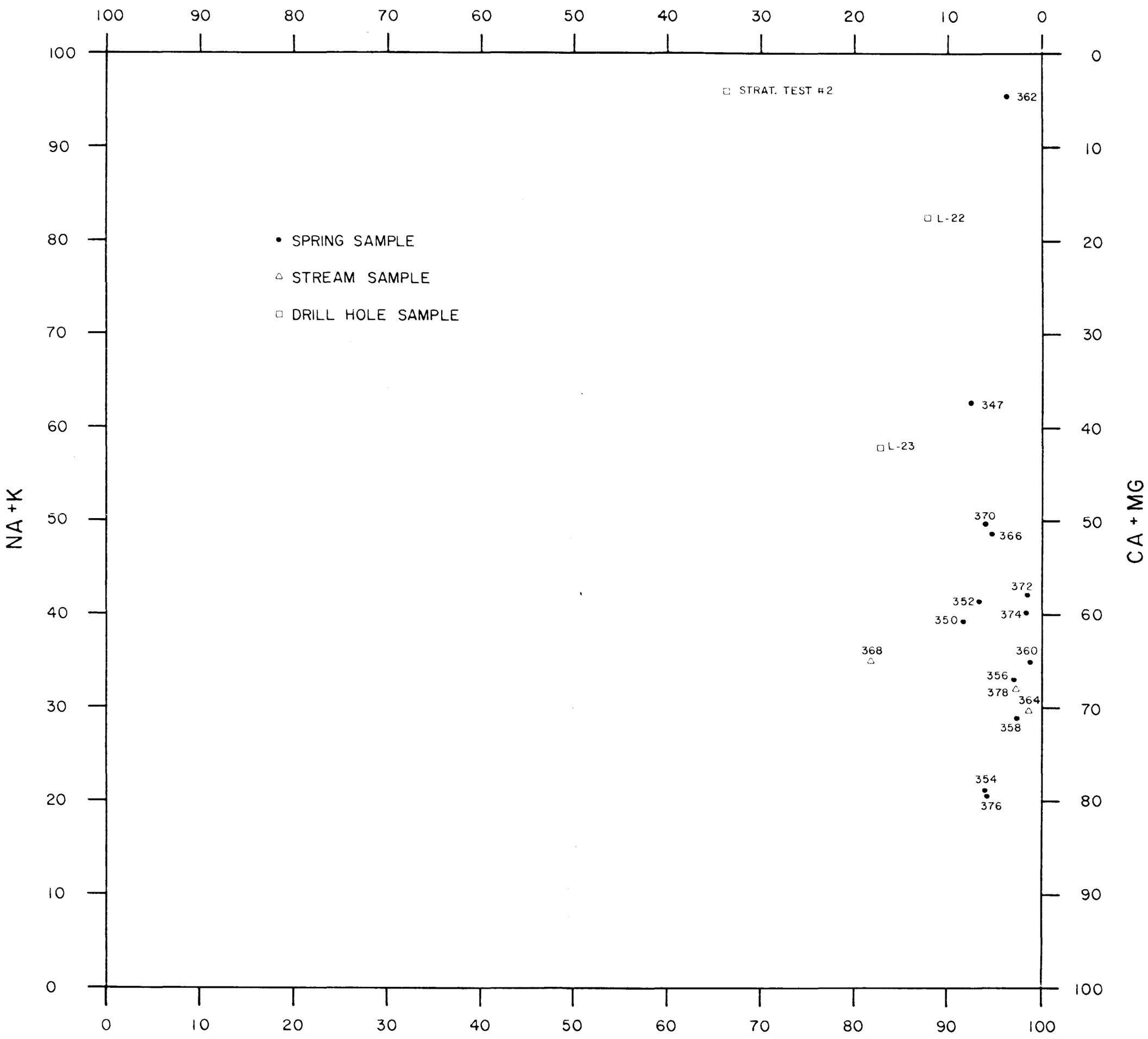


PLATE 5